STIC Search Report
EIC 1700

STIC Database Tracking Number: 96758

TO: Michael Feely **Location: CP3 6B15** **Art Unit : 1712** **June 18, 2003** **Case Serial Number: 09/899031**	**From: Kathleen Fuller** **Location: EIC 1700** **CP3/4 3D62** **Phone: 308-4290** **Kathleen.Fuller@uspto.gov**

Search Notes

The structure claims were very broad. Therefore I had to subject search the Chemical Abstracts File, extract the registry number from the pertinent abstracts and search the very broad structure query against the extracted registry numbers.

Access DB# 4658

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Michael Feely Examiner #: 76012 Date: 6/17/03
Art Unit: 1712 Phone Number 305-0268 Serial Number: 09/899,031
Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL
↳ 5035 ↳ 6B15

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Liquid Crystal Comps. Comprising Liquid Crystal Molecules + Alignment Promoter
Inventors (please provide full names): Ichihashi, Mitsuyoshi; Kawata, Ken; Takeuchi, Hiroshi; Matsuoka, Koushin
Earliest Priority Filing Date: 7/6/2000 (Foreign) / 7/6/2001 (US)

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Looking for the alignment promoter in claims 1-16 and 23.

Thanks.

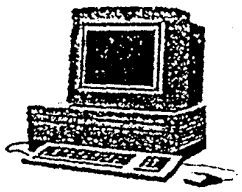
****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: K.F.	NA Sequence (#)		STN	✓
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	2	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic		Dr.Link	
Date Completed: 6/18/03	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 30	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 65	Other		Other (specify)	

PTO-1590 (1-2000)

EIC1700

Search Results Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search ***or contact***:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example:* 1713

- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in **CP3/4 - 3D62** .

=> FILE REG
FILE 'REGISTRY' ENTERED AT 12:36:17 ON 18 JUN 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 17 JUN 2003 HIGHEST RN 532924-24-6
DICTIONARY FILE UPDATES: 17 JUN 2003 HIGHEST RN 532924-24-6

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 12:36:22 ON 18 JUN 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 18 Jun 2003 VOL 138 ISS 25
FILE LAST UPDATED: 17 Jun 2003 (20030617/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L26
L4 STR

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G2~G1~Cy      Si~O       Si~O~Ak
 1   2   3     4  @5      6  7  @8
```

broad query to cover all the claims

REP G1=(0-10) A
VAR G2=8/5/CB/AK
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L10	175	SEA FILE=HCAPLUS ABB=ON ALIGN?(3A)PROMOT?
L11	26249	SEA FILE=HCAPLUS ABB=ON MOLECULAR?(3A)ORIENT?
L15	140328	SEA FILE=HCAPLUS ABB=ON LIQ?(3A)CRYST?
L16	8711	SEA FILE=HCAPLUS ABB=ON L15 AND ALIGN?
L17	3840	SEA FILE=HCAPLUS ABB=ON L11 AND L15
L20	11523	SEA FILE=HCAPLUS ABB=ON L16 OR L17
L21		SEL L20 1-11523 RN : 21049 TERMS
L22	21045	SEA FILE=REGISTRY ABB=ON L21
L24	15903	SEA FILE=REGISTRY SUB=L22 SSS FUL L4
L25	1612865	SEA FILE=HCAPLUS ABB=ON L24
L26	18	SEA FILE=HCAPLUS ABB=ON L10 AND L25

=> D L26 BIB ABS HITIND HITSTR 1-18

L26 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:28027 HCAPLUS
DN 138:391305
TI Colloidal behaviour in a confined cylindrical cell
AU Bowen, W. Richard; Wilson, Jonathan
CS Centre for Complex Fluids Processing, Department of Chemical and Biological Process Engineering, University of Wales, Swansea, SA28PP, UK
SO Colloids and Surfaces, A: Physicochemical and Engineering Aspects (2003), 213(1), 59-68
CODEN: CPEAEH; ISSN: 0927-7757
PB Elsevier Science B.V.
DT Journal
LA English
AB The interactions of colloidal particles in a confined cylindrical cell have been investigated using a combination of video microscopy, real-time digital imaging and still micrographs. Confinement of colloidal latex particles of diam. 4.5 .mu.m in cylindrical glass capillaries of diam. 25 .mu.m resulted in their alignment along the center of the cell with a clear particle-free zone along the wall. This tendency was obsd. over a range of ionic strengths from deionized water to 0.1 M NaCl, but was greatest at low concns. of electrolyte. The dimensions of the particle-free zone were orders of magnitude greater than the Debye lengths of the solns. Particles of diam. 3.0 .mu.m also exhibited alignment, but not 1.2 .mu.m particles, indicating that there is a fine balance between the forces **promoting alignment** and kinetic effects.
The particles along the center of the capillary formed dynamic chains in which an av. of .apprx.3 particles were in contact at any time. The rate of movement of the particles increased with decreasing salt content. These observations are consistent with asymmetries in electrostatic or hydrodynamic interactions induced by the cell wall, or possibly by a combination of such effects.
CC 66-4 (Surface Chemistry and Colloids)
IT **9003-53-6**, Polystyrene
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(colloidal behavior in a confined cylindrical cell)

IT **9003-53-6**, Polystyrene
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(colloidal behavior in a confined cylindrical cell)
RN 9003-53-6 HCAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

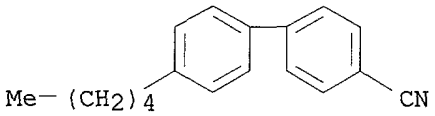
CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:884235 HCAPLUS
DN 138:98481
TI Effects of Surface Morphology on the Anchoring and Electrooptical Dynamics of Confined Nanoscale Liquid Crystalline Films
AU Noble, Alison R.; Kwon, Hye J.; Nuzzo, Ralph G.
CS Department of Chemistry and the Frederick Seitz Materials Research Laboratory, University of Illinois, Urbana, IL, 61801, USA
SO Journal of the American Chemical Society (2002), 124(50), 15020-15029
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
AB The orientation and dynamics of two 40-nm thick films of 4-n-pentyl-4'-cyanobiphenyl (5CB), a nematic liq. crystal, were studied using step-scan FTIR spectroscopy. The films are confined in nanocavities bounded by an interdigitated electrode array (IDA) patterned on a Zn selenide (ZnSe) substrate. The effects of the ZnSe surface morphol. (specifically, two variations of nanometer-scale corrugations obtained by mech. polishing) on the initial ordering and reorientation dynamics of the elec.-field-induced Freedericksz transition are presented here. The interaction of the 5CB with ZnSe surfaces bearing a spicular corrugation induces a homeotropic (surface normal) alignment of the film confined in the cavity. Alternately, when ZnSe is polished to generate fine grooves along the surface, a planar **alignment** is **promoted** in the liq. cryst. film. Time-resolved FTIR studies that enable the direct measurement of the rate consts. for the elec.-field-induced orientation and thermal relaxation reveal that the dynamic transitions of the two film structures are significantly different. These measurements quant. demonstrate the strong effects of surface morphol. on the anchoring, order, and dynamics of liq. cryst. thin films.
CC 75-11 (Crystallography and Liquid Crystals)
Section cross-reference(s): 66, 74
IT **40817-08-1**, 5CB
RL: PRP (Properties)
(effects of surface morphol. on anchoring and electrooptical dynamics of confined nanoscale 5CB liq. cryst. films bounded by interdigitated electrode array on patterned zinc selenide substrates)
IT **40817-08-1**, 5CB

RL: PRP (Properties)
(effects of surface morphol. on anchoring and electrooptical dynamics of confined nanoscale 5CB liq. cryst. films bounded by interdigitated electrode array on patterned zinc selenide substrates)
RN 40817-08-1 HCAPLUS
CN [1,1'-Biphenyl]-4-carbonitrile, 4'-pentyl- (9CI) (CA INDEX NAME)



RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:31094 HCAPLUS
DN 136:93582
TI Liquid crystal composition comprising discotic liquid crystal molecules and **alignment promoter**
IN Ichihashi, Mitsuyoshi; Kawata, Ken; Takeuchi, Hiroshi; Matsuoka, Koushin
PA Fuji Photo Film Co., Ltd., Japan
SO Eur. Pat. Appl., 115 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1170353	A2	20020109	EP 2001-115725	20010706
	EP 1170353	A3	20030122		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002020363	A2	20020123	JP 2000-205710	20000706
	JP 2002038157	A2	20020206	JP 2000-220963	20000721
	US 2002039627	A1	20020404	US 2001-899031	20010706
	JP 2002129162	A2	20020509	JP 2001-206337	20010706
PRAI	JP 2000-205709	A	20000706		
	JP 2000-205710	A	20000706		
	JP 2000-220963	A	20000721		

OS MARPAT 136:93582
AB A liq. crystal compn. comprises liq. crystal mols. and an **alignment promoter**. The **alignment promoter** is represented by the general formula (Hb-L1Cy1-L2)nAr (Hb = C6-40-aliph., C1-40-aliph. oligosiloxanoxy group; L1 = single bond, divalent linking group comprising alkylene, fluorine-substituted alkylene, -O-, -S-, -CO-, -NR-, -SO2-; L2 = single bond, divalent linking group comprising alkylene, alkenylene, alkynylene, -O-, -S-, -CO-, -NR-, -SO2-; R = H, C1-30-alkyl; Cy1 = divalent arom. or heterocyclic; n = 2 - 5; Ar = n-valent arom.). The object of the present invention is to provide a liq. crystal compn. in which liq. crystal mols. can easily be aligned uniformly. Another object of the invention is to provide an optically anisotropic element in which liq. crystal mols. are uniformly aligned near an interface having no orientation layer.
IC ICM C09K019-56
ICS G02F001-1337

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75

ST liq discotic crystal display **alignment promoter** compd; orientation layer **alignment promoter** compd liq discotic crystal display

IT Liquid crystals
(discotic; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT Liquid crystal displays
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT Molecular orientation
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter** in relation to)

IT 4236-15-1, Megafac F 104
RL: RCT (Reactant); RACT (Reactant or reagent)
(Megafac F-104; in synthesis of **alignment promoter** compd.)

IT **66230-67-9**, ZLI 1132
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ZLI 1132; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **381233-68-7P 387822-61-9P 387822-68-6P 387822-70-0P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**alignment promoter**; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **387822-63-1P 387822-66-4P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**alignment promoter**; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **387822-74-4 387822-75-5 387822-77-7 387822-78-8 387822-79-9**
RL: TEM (Technical or engineered material use); USES (Uses)
(**alignment promoter**; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **89-55-4**, 5-Bromosalicylic acid **92-70-6**, 3-Hydroxy-2-naphthoic acid 100-02-7, p-Nitrophenol, reactions 108-73-6, 1,3,5-Trihydroxybenzene 108-77-0, Cyanuric chloride **536-74-3**, Phenylacetylene **885-82-5 1095-03-0**, Phenyl borate **1321-05-7**, Bromosalicylic acid 30136-15-3, Nitrocatechol
RL: RCT (Reactant); RACT (Reactant or reagent)
(in synthesis of **alignment promoter** compd.)

IT **323-87-5P**, 5-Phenylsalicylic acid **7163-25-9P 17504-14-2P 37540-59-3P** 387822-37-9P **387822-38-0P 387822-39-1P 387822-40-4P 387822-41-5P 387822-42-6P 387822-43-7P 387822-44-8P 387822-46-0P 387822-50-6P 387822-53-9P 387822-55-1P 387822-58-4P 387822-59-5P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in synthesis of **alignment promoter** compd.)

IT **332112-04-6**
RL: DEV (Device component use); USES (Uses)
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **387822-81-3**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **173071-44-8**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **132694-65-6 339588-79-3**
RL: TEM (Technical or engineered material use); USES (Uses)
(rod-like liq. crystal; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

IT **66230-67-9**, ZLI 1132
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ZLI 1132; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

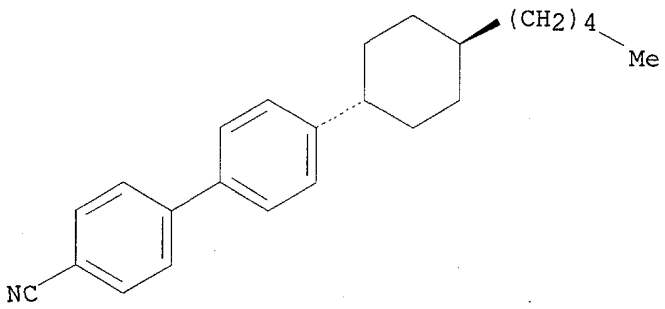
RN 66230-67-9 HCAPLUS

CN [1,1'-Biphenyl]-4-carbonitrile, 4'-(4-pentylcyclohexyl)-, trans-, mixt. with 4-(trans-4-heptylcyclohexyl)benzonitrile, 4-(trans-4-pentylcyclohexyl)benzonitrile and 4-(trans-4-propylcyclohexyl)benzonitrile (9CI) (CA INDEX NAME)

CM 1

CRN 68065-81-6
CMF C24 H29 N

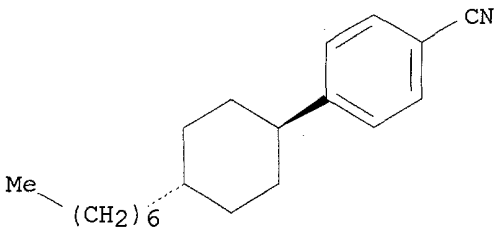
Relative stereochemistry.



CM 2

CRN 61204-03-3
CMF C20 H29 N

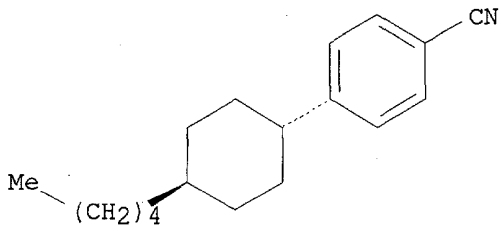
Relative stereochemistry.



CM 3

CRN 61204-01-1
CMF C18 H25 N

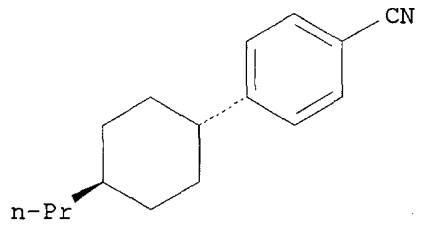
Relative stereochemistry.



CM 4

CRN 61203-99-4
CMF C16 H21 N

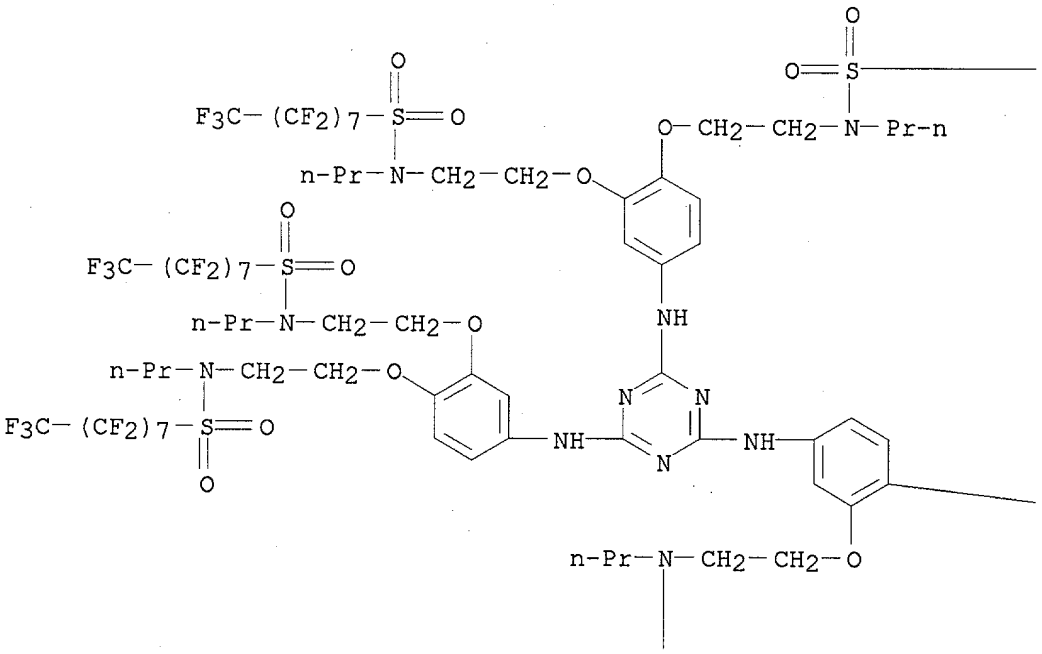
Relative stereochemistry.



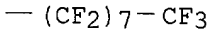
IT **381233-68-7P 387822-61-9P 387822-68-6P 387822-70-0P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**alignment promoter**; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)
RN 381233-68-7 HCAPLUS
CN 1-Octanesulfonamide, N,N',N'',N''',N'''',N'''''-[1,3,5-triazine-2,4,6-triyltris[imino-4,1,2-benzenetriylbis(oxy-2,1-

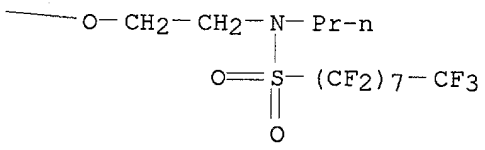
ethanediyl)]]hexakis[1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)

PAGE 1-A

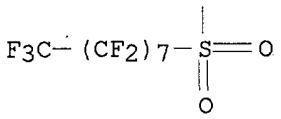


PAGE 1-B



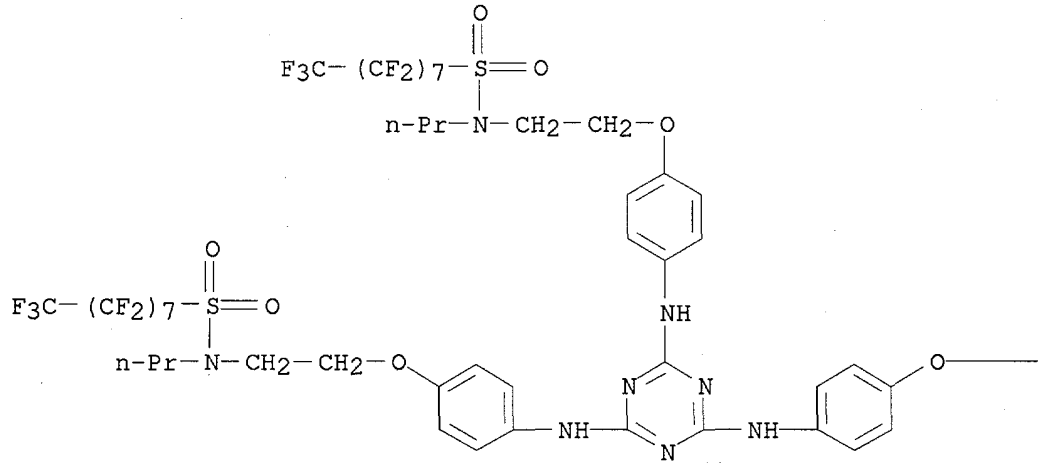


PAGE 2-A

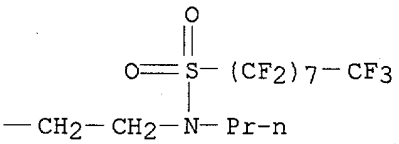


RN 387822-61-9 HCAPLUS
CN 1-Octanesulfonamide, N,N',N''-[1,3,5-triazine-2,4,6-triyltris(imino-4,1-phenyleneoxy-2,1-ethanediyl)]tris[1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)

PAGE 1-A

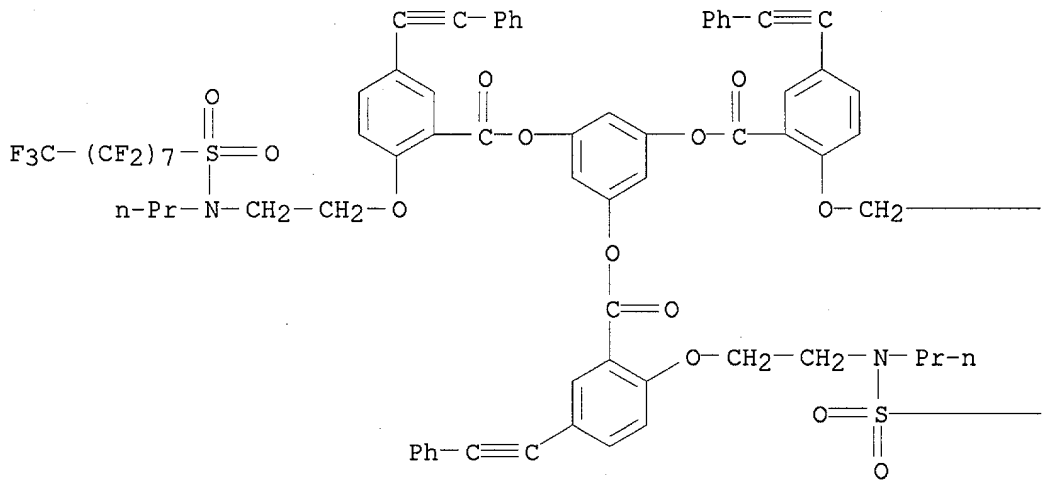


PAGE 1-B

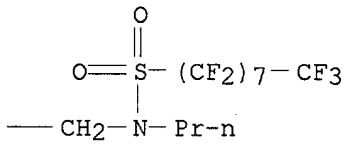


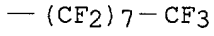
RN 387822-68-6 HCAPLUS
CN Benzoic acid, 2-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-5-(phenylethynyl)-, 1,3,5-benzenetriyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



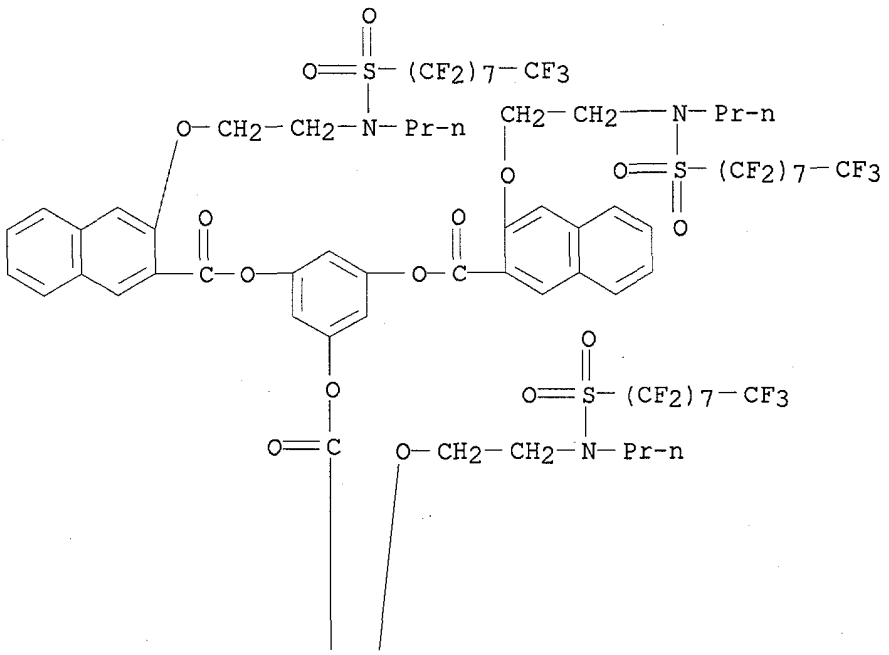
PAGE 1-B



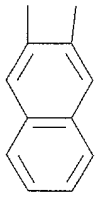


RN 387822-70-0 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 3-[2-[[(heptadecafluorooctyl)sulfonyl]propyl amino]ethoxy]-, 1,3,5-benzenetriyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



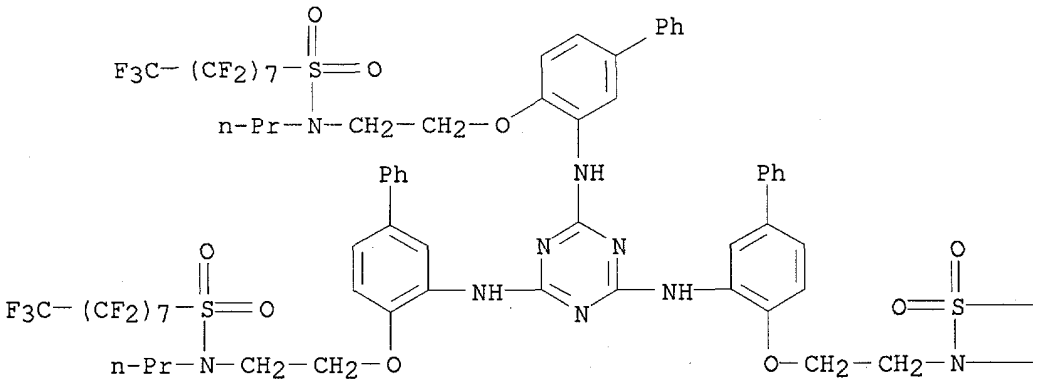
PAGE 2-A



IT **387822-63-1P 387822-66-4P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**alignment promoter**; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

RN 387822-63-1 HCAPLUS
CN 1-Octanesulfonamide, N,N',N''-[1,3,5-triazine-2,4,6-triyltris(imino[1,1'-biphenyl]-3,4-diyloxy-2,1-ethanediyl)]tris[1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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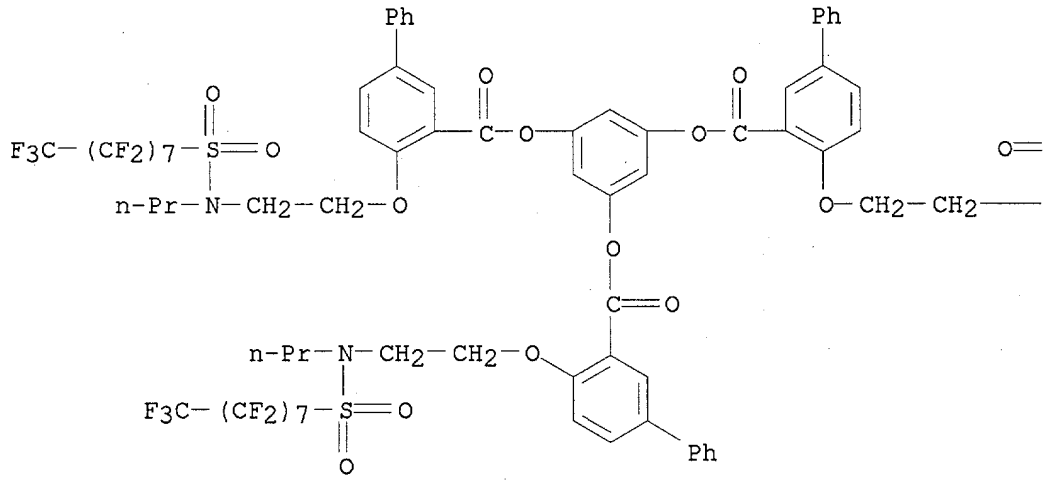
— $(CF_2)_7-CF_3$

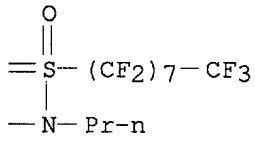
— Pr-n

RN 387822-66-4 HCAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 4-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-, 1,3,5-benzenetriyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



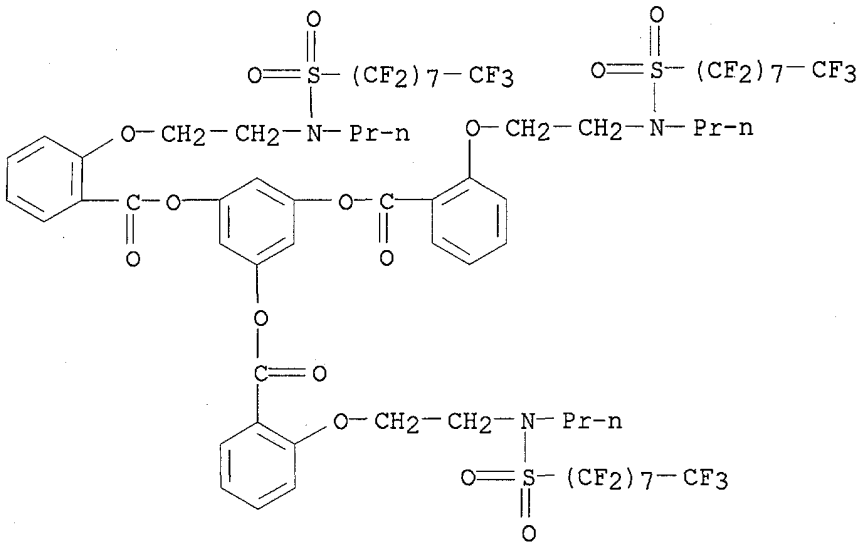
PAGE 1-B



IT **387822-74-4 387822-75-5 387822-77-7**
387822-78-8 387822-79-9
RL: TEM (Technical or engineered material use); USES (Uses)
(**alignment promoter**; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

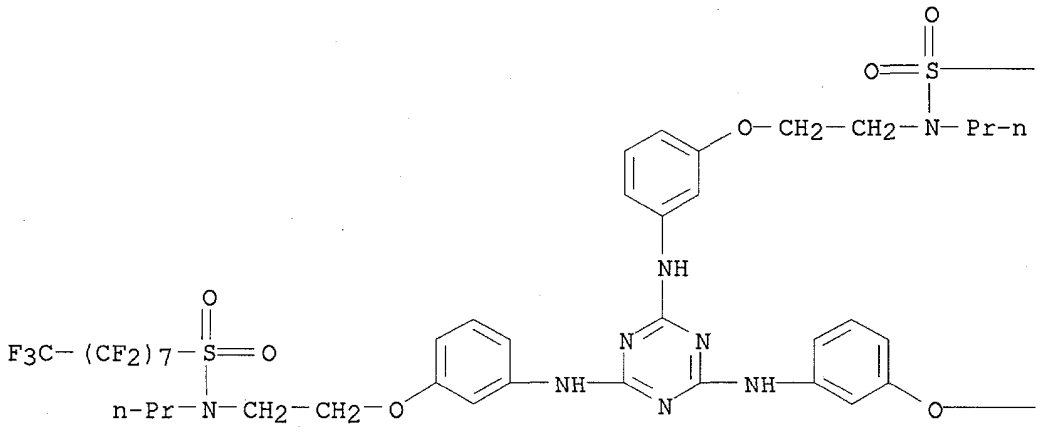
RN 387822-74-4 HCAPLUS

CN Benzoic acid, 2-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-, 1,3,5-benzenetriyl ester (9CI) (CA INDEX NAME)

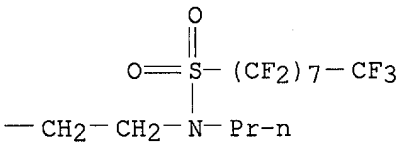


RN 387822-75-5 HCAPLUS
CN 1-Octanesulfonamide, N,N',N''-[1,3,5-triazine-2,4,6-triyltris(imino-3,1-phenyleneoxy-2,1-ethanediyl)]tris[1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)

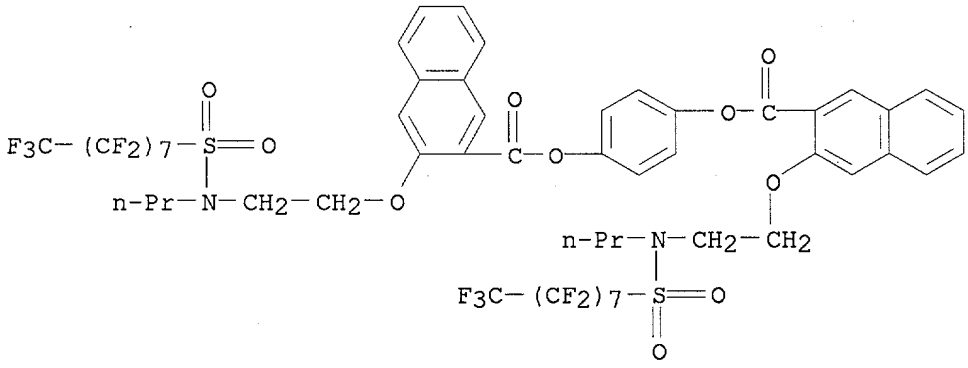
PAGE 1-A



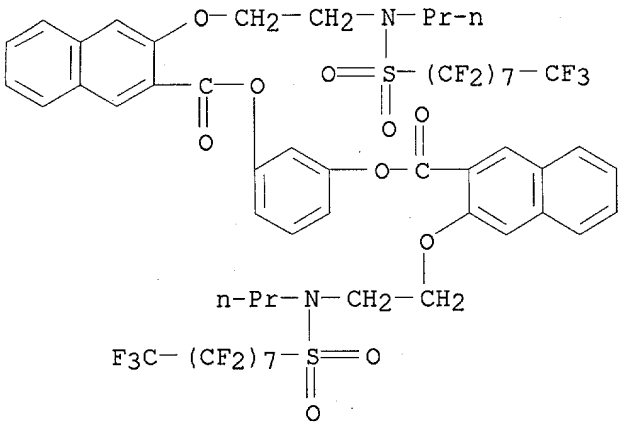
PAGE 1-B



RN 387822-77-7 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 3-[2-[[(heptadecafluorooctyl)sulfonyl]propyl amino]ethoxy]-, 1,4-phenylene ester (9CI) (CA INDEX NAME)



RN 387822-78-8 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 3-[2-[[(heptadecafluorooctyl)sulfonyl]propyl amino]ethoxy]-, 1,3-phenylene ester (9CI) (CA INDEX NAME)



RN 387822-79-9 HCAPLUS
CN Benzoic acid, 2-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-5-(phenylazo)-, 1,3,5-benzenetriyl ester (9CI) (CA INDEX NAME)

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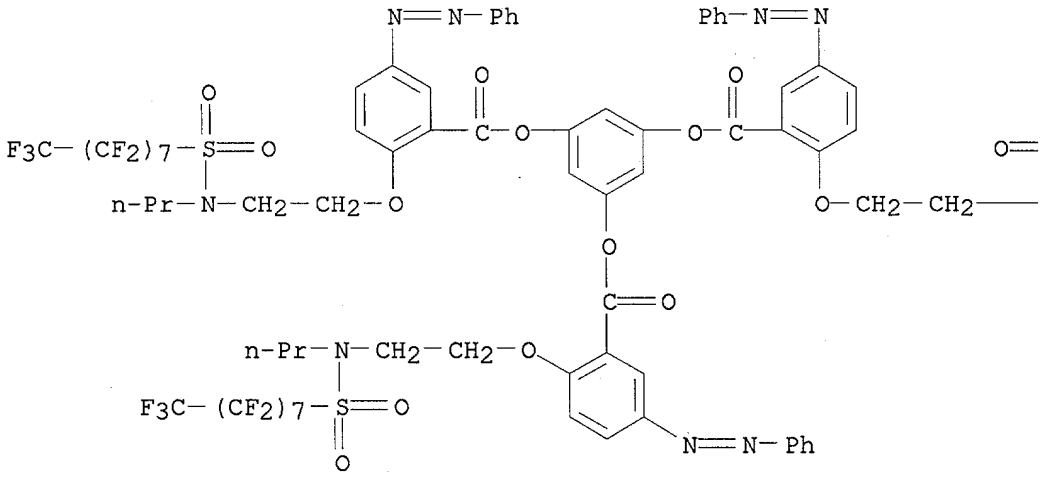

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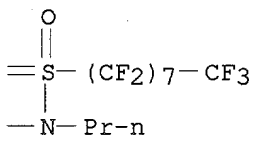
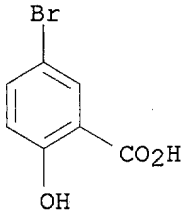


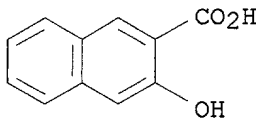
IT **89-55-4,** 5-Bromosalicylic acid **92-70-6,**

3-Hydroxy-2-naphthoic acid **536-74-3,** Phenylacetylene **885-82-5 1095-03-0,** Phenyl borate **1321-05-7,** Bromosalicylic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(in synthesis of **alignment promoter** compd.)

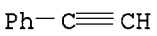
RN 89-55-4 HCAPLUS
CN Benzoic acid, 5-bromo-2-hydroxy- (9CI) (CA INDEX NAME)



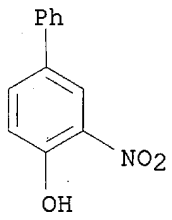
RN 92-70-6 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 3-hydroxy- (9CI) (CA INDEX NAME)



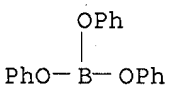
RN 536-74-3 HCAPLUS
CN Benzene, ethynyl- (8CI, 9CI) (CA INDEX NAME)



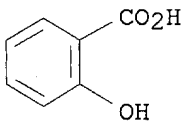
RN 885-82-5 HCAPLUS
CN [1,1'-Biphenyl]-4-ol, 3-nitro- (9CI) (CA INDEX NAME)



RN 1095-03-0 HCAPLUS
CN Boric acid (H3BO3), triphenyl ester (8CI, 9CI) (CA INDEX NAME)

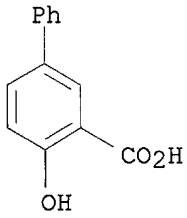


RN 1321-05-7 HCAPLUS
CN Benzoic acid, bromo-2-hydroxy- (9CI) (CA INDEX NAME)

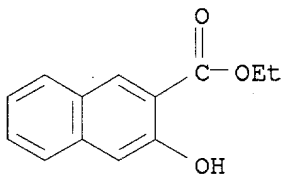


D1— Br

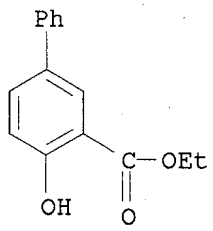
IT **323-87-5P**, 5-Phenylsalicylic acid **7163-25-9P**
17504-14-2P 37540-59-3P 387822-38-0P
387822-39-1P 387822-40-4P 387822-41-5P
387822-42-6P 387822-43-7P 387822-44-8P
387822-46-0P 387822-50-6P 387822-53-9P
387822-55-1P 387822-58-4P 387822-59-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in synthesis of **alignment promoter** compd.)
RN 323-87-5 HCAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 4-hydroxy- (9CI) (CA INDEX NAME)



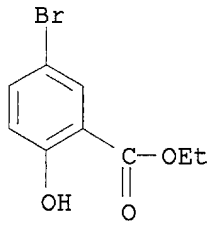
RN 7163-25-9 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 3-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



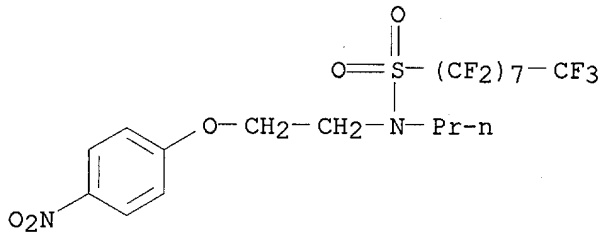
RN 17504-14-2 HCAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 4-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



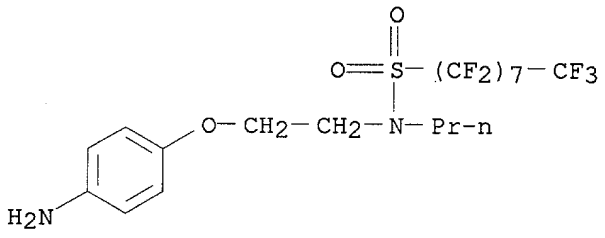
RN 37540-59-3 HCAPLUS
CN Benzoic acid, 5-bromo-2-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



RN 387822-38-0 HCAPLUS
CN 1-Octanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-[2-(4-nitrophenoxy)ethyl]-N-propyl- (9CI) (CA INDEX NAME)

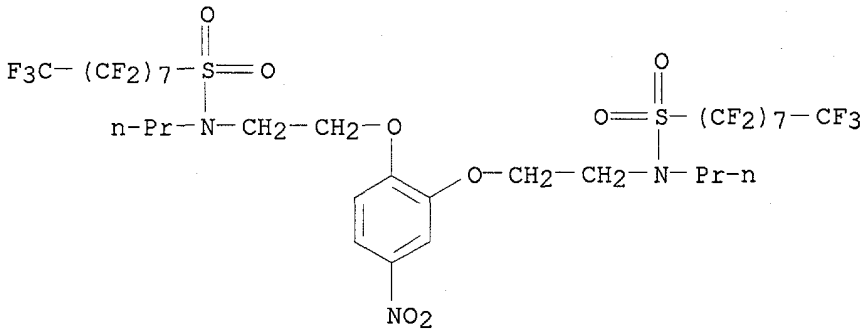


RN 387822-39-1 HCAPLUS
CN 1-Octanesulfonamide, N-[2-(4-aminophenoxy)ethyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)

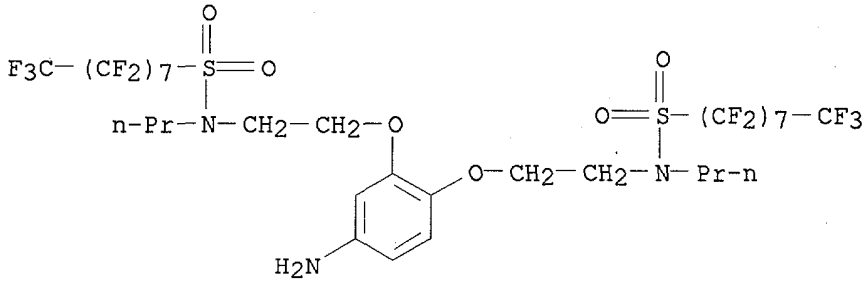


RN 387822-40-4 HCAPLUS
CN 1-Octanesulfonamide, N,N'-[(4-nitro-1,2-phenylene)bis(oxy-2,1-

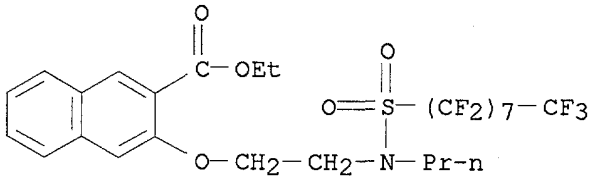
ethanediyl)]bis[1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)



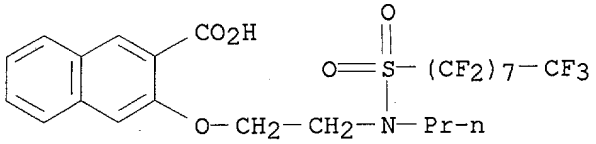
RN 387822-41-5 HCAPLUS
CN 1-Octanesulfonamide, N,N'-[(4-amino-1,2-phenylene)bis(oxy-2,1-ethanediyl)]bis[1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)



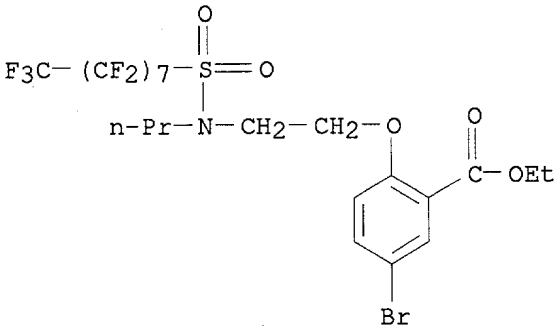
RN 387822-42-6 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 3-[2-[[(heptadecafluorooctyl)sulfonyl]propyl amino]ethoxy]-, ethyl ester (9CI) (CA INDEX NAME)



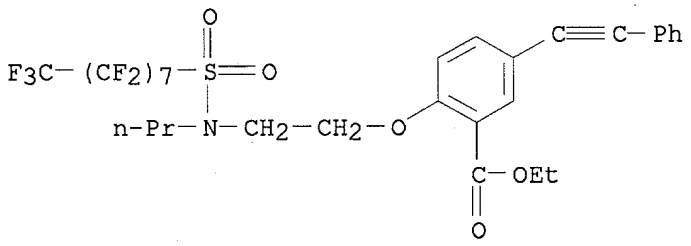
RN 387822-43-7 HCAPLUS
CN 2-Naphthalenecarboxylic acid, 3-[2-[[(heptadecafluorooctyl)sulfonyl]propyl amino]ethoxy]- (9CI) (CA INDEX NAME)



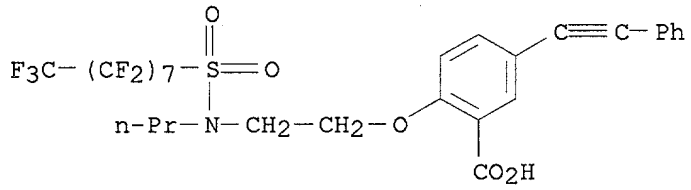
RN 387822-44-8 HCAPLUS
CN Benzoic acid, 5-bromo-2-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-, ethyl ester (9CI) (CA INDEX NAME)



RN 387822-46-0 HCAPLUS
CN Benzoic acid, 2-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-5-(phenylethynyl)-, ethyl ester (9CI) (CA INDEX NAME)

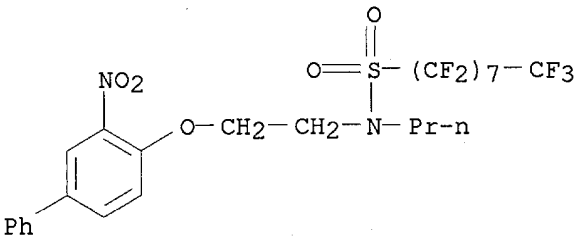


RN 387822-50-6 HCAPLUS
CN Benzoic acid, 2-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-5-(phenylethynyl)- (9CI) (CA INDEX NAME)

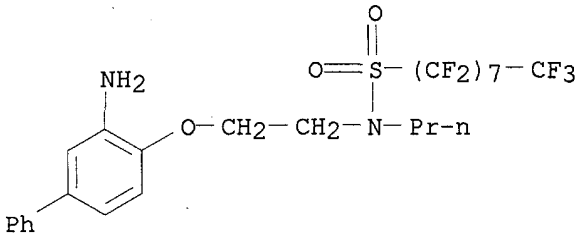


RN 387822-53-9 HCAPLUS
CN 1-Octanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-

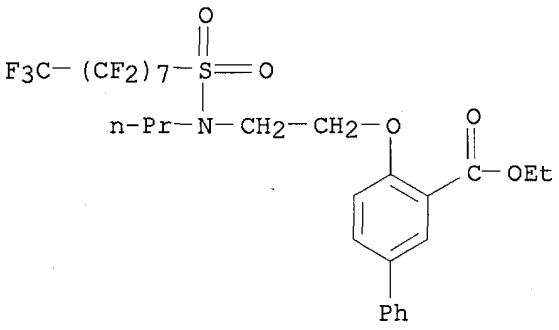
[2-[(3-nitro[1,1'-biphenyl]-4-yl)oxy]ethyl]-N-propyl- (9CI) (CA INDEX NAME)



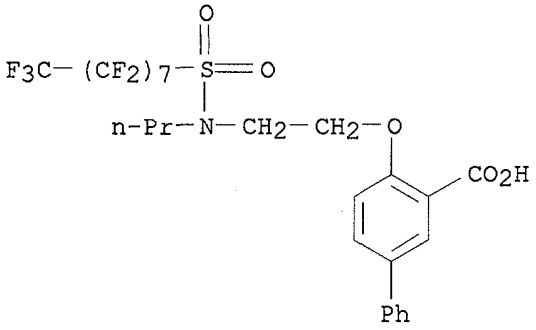
RN 387822-55-1 HCAPLUS
CN 1-Octanesulfonamide, N-[2-[(3-amino[1,1'-biphenyl]-4-yl)oxy]ethyl]-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-propyl- (9CI) (CA INDEX NAME)



RN 387822-58-4 HCAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 4-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]-, ethyl ester (9CI) (CA INDEX NAME)



RN 387822-59-5 HCAPLUS
CN [1,1'-Biphenyl]-3-carboxylic acid, 4-[2-[[(heptadecafluorooctyl)sulfonyl]propylamino]ethoxy]- (9CI) (CA INDEX NAME)



IT **332112-04-6**
RL: DEV (Device component use); USES (Uses)
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)
RN 332112-04-6 HCAPLUS
CN 2-Propenoic acid, 3-[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]phenyl]-, 2,3,6,7,10,11-triphenylenehexayl ester (9CI) (CA INDEX NAME)

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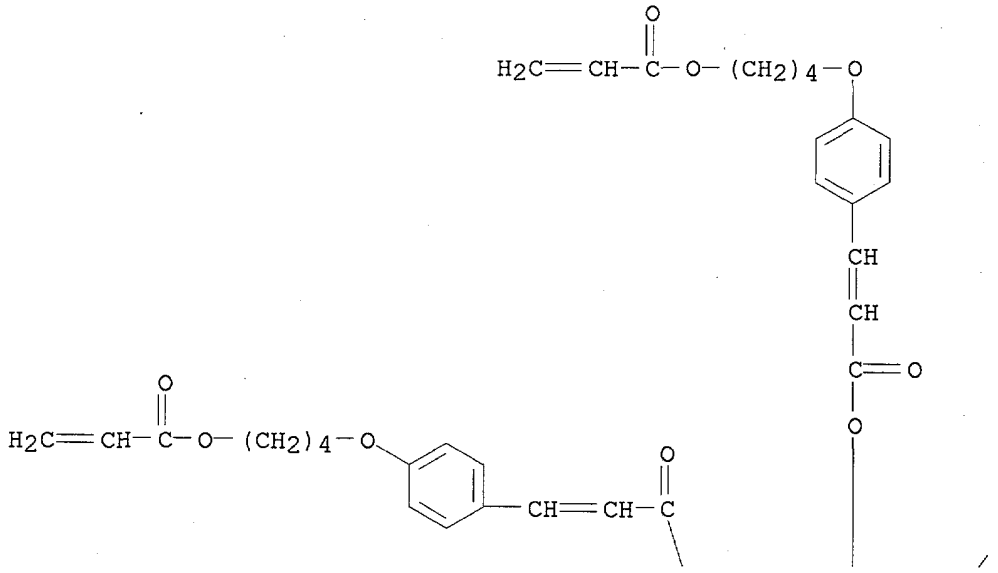

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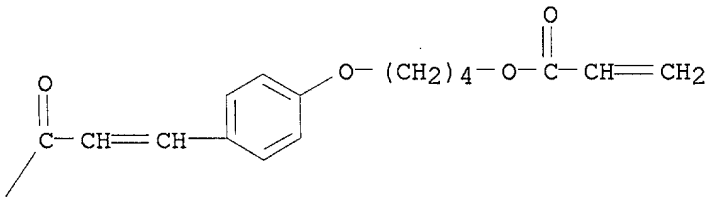

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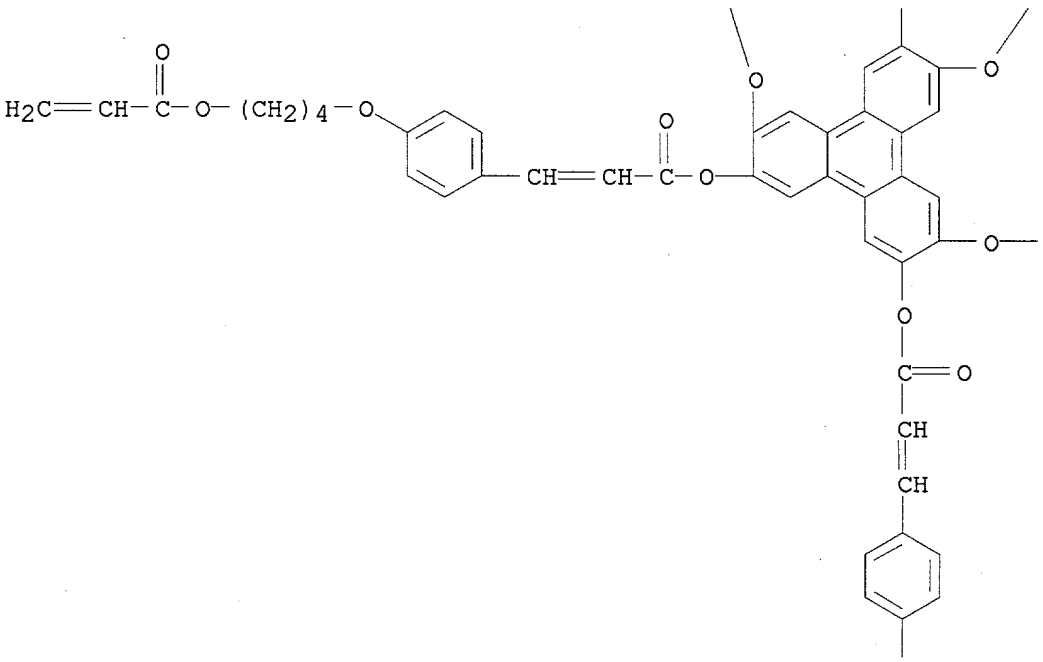
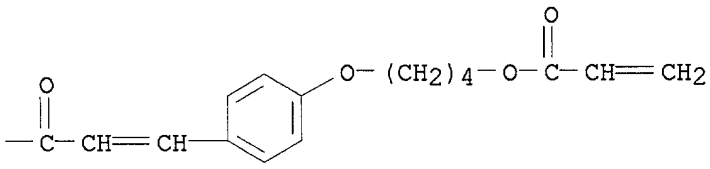
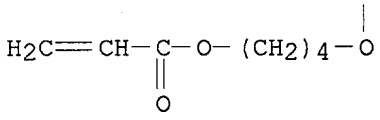


PAGE 2-B



PAGE 3-A



IT **387822-81-3**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)

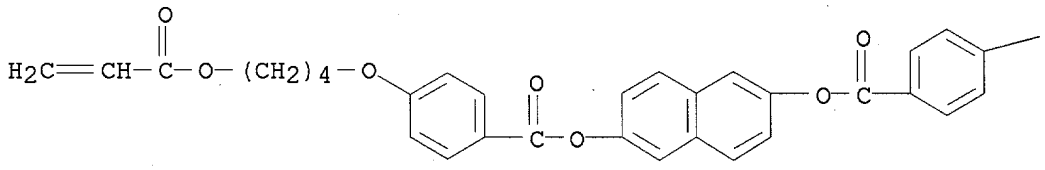
RN 387822-81-3 HCAPLUS

CN D-Glucitol, 1,4:3,6-dianhydro-, bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate], polymer with 2,6-naphthalenediyl bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate] and 1,4-phenylene bis[4-[4-[(1-oxo-2-propenyl)oxy]butoxy]benzoate] (9CI) (CA INDEX NAME)

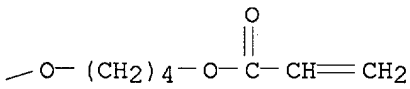
CM 1

CRN 339588-79-3
CMF C38 H36 O10

PAGE 1-A



PAGE 1-B

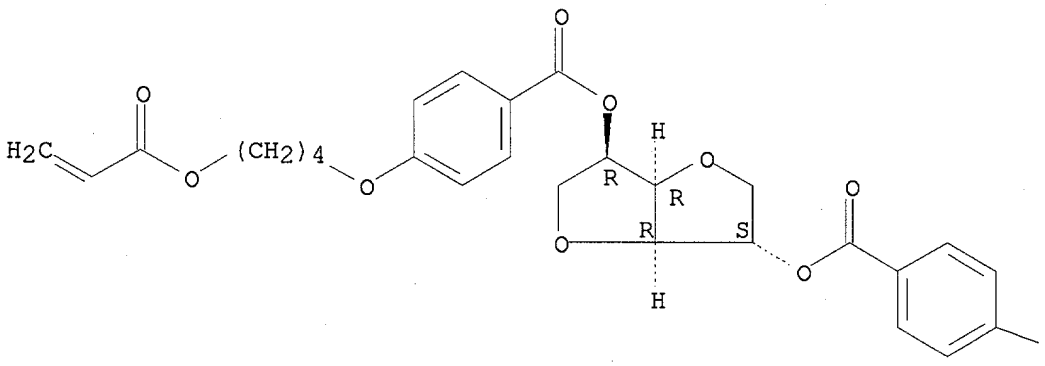


CM 2

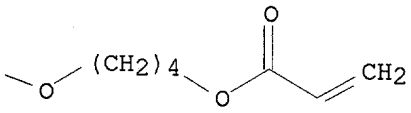
CRN 250230-59-2
CMF C34 H38 O12

Absolute stereochemistry.

PAGE 1-A



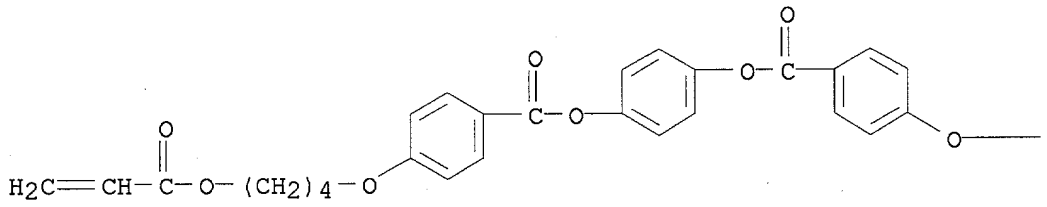
PAGE 1-B



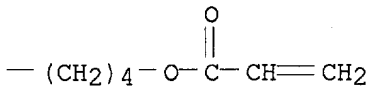
CM 3

CRN 132694-65-6
CMF C34 H34 O10

PAGE 1-A

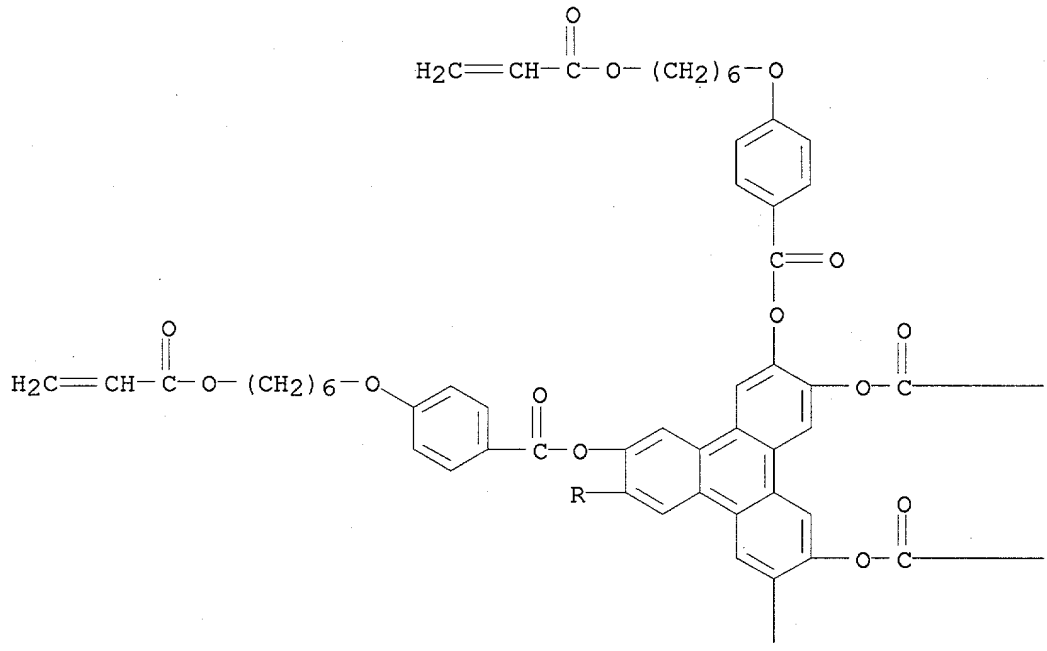


PAGE 1-B

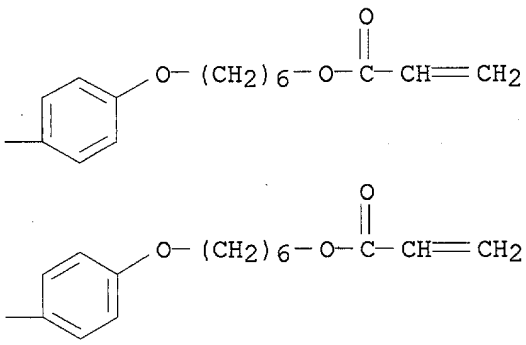


IT **173071-44-8**
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)
RN 173071-44-8 HCAPLUS
CN Benzoic acid, 4-[[6-[(1-oxo-2-propenyl)oxy]hexyl]oxy]-, 2,3,6,7,10,11-triphenylenehexayl ester (9CI) (CA INDEX NAME)

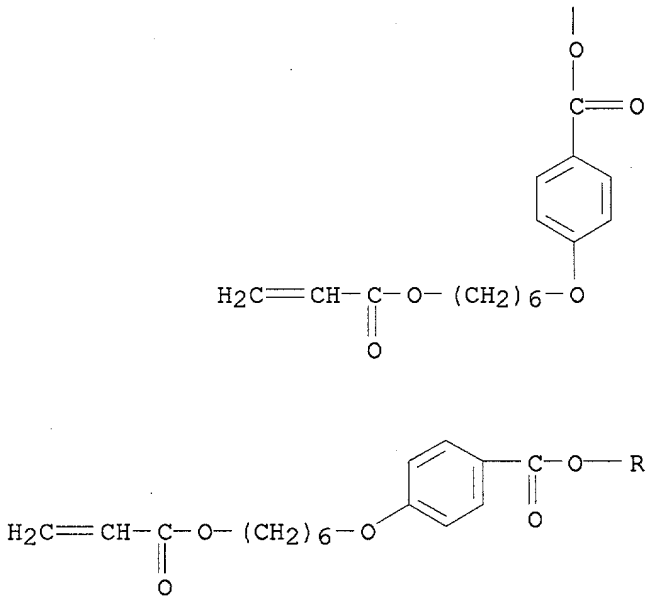
PAGE 1-A



PAGE 1-B

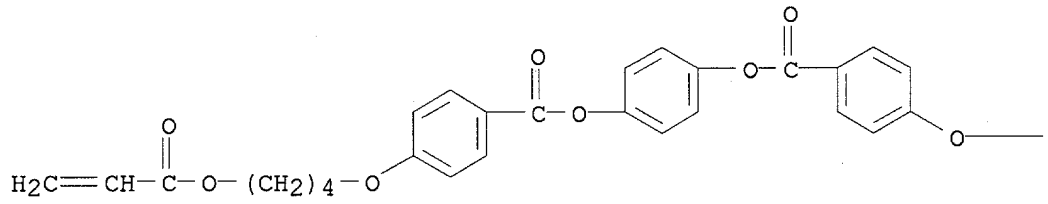


PAGE 2-A

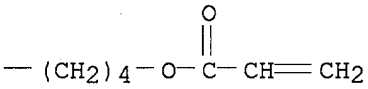


IT **132694-65-6 339588-79-3**
RL: TEM (Technical or engineered material use); USES (Uses)
(rod-like liq. crystal; liq. crystal compn. comprising discotic and rod-like liq. crystal mols. and **alignment promoter**)
RN 132694-65-6 HCAPLUS
CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 1,4-phenylene ester (9CI) (CA INDEX NAME)

PAGE 1-A

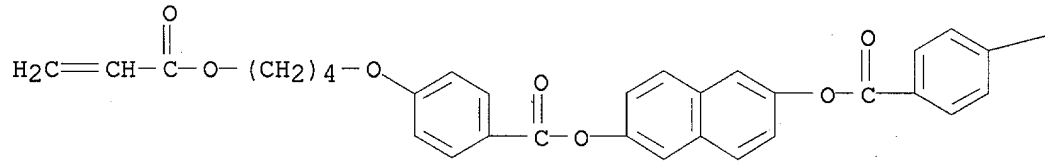


PAGE 1-B

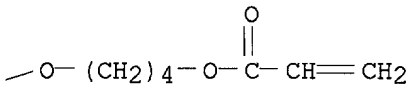


RN 339588-79-3 HCAPLUS
CN Benzoic acid, 4-[4-[(1-oxo-2-propenyl)oxy]butoxy]-, 2,6-naphthalenediyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



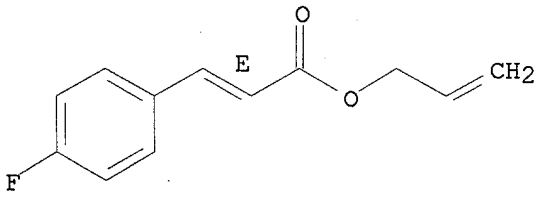
PAGE 1-B



L26 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:153786 HCAPLUS
DN 134:373964
TI Allyl p-fluor cinnamate grafted polysiloxane photoalignment films polymerized under linear polarized UV light
AU Liu, J.; Liang, X.; Tang, H.; Xu, S.; Gao, H.
CS Department of Chemistry, Tsinghua University, Beijing, 100084, Peop. Rep. China
SO Thin Solid Films (2001), 384(2), 212-214
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier Science S.A.

DT Journal
LA English
AB Polysiloxane allyl p-fluor cinnamate (PSAFC) photopolymer films **promote** uniform **alignment** of adjacent liq. crystals (LC) upon photopolymn. by linear polarized UV light. Such films show excellent thermal stability with considerable dichroism after undergoing linear polarized UV-induced cycloaddn. reaction. There is no clear difference between the at. force microscope (AFM) images of the films before and after the exposure, which shows that there is no clear morphol. anisotropy on the exposed film.
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT **270907-93-2D**, graft copolymer with polysiloxane
RL: TEM (Technical or engineered material use); USES (Uses)
(thermally stable allyl p-fluorocinnamate-grafted polysiloxane photoalignment film for uniform alignment of liq. crystals upon photopolymn. under polarized UV light)
IT **270907-93-2D**, graft copolymer with polysiloxane
RL: TEM (Technical or engineered material use); USES (Uses)
(thermally stable allyl p-fluorocinnamate-grafted polysiloxane photoalignment film for uniform alignment of liq. crystals upon photopolymn. under polarized UV light)
RN 270907-93-2 HCAPLUS
CN 2-Propenoic acid, 3-(4-fluorophenyl)-, 2-propenyl ester, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:219340 HCAPLUS
DN 132:315714
TI Modeling the Interface Region of Command Surface 2. Spectroscopic Evaluations of Azobenzene/Liquid Crystal Hybrid Langmuir-Blodgett Films under Illumination
AU Ubukata, Takashi; Seki, Takahiro; Morino, Shin'ya; Ichimura, Kunihiro
CS Photofunctional Chemistry Division Research Laboratory of Resources Utilization, Tokyo Institute of Technology, Yokohama, 226-8503, Japan
SO Journal of Physical Chemistry B (2000), 104(17), 4148-4154
CODEN: JPCBFK; ISSN: 1089-5647
PB American Chemical Society
DT Journal
LA English
AB Langmuir-Blodgett (LB) films composed of the mixt. of an amphiphilic polymer contg. azobenzene (Az) side chain (6Az10-PVA) and 4'-pentyl-4-cyanobiphenyl (5CB) were prepd. to mimic the 2-dimensional contacting region of the LC/Az interface of the command surface which

photochem. switches the LC alignment. UV-visible absorption and FTIR spectroscopic measurements were carried out under illumination. These procedures allowed sep. and simultaneous evaluations of the static state and dynamic mol. motions of both Az and LC mols., which probably reflect the initial triggering step of the domino-mode response of LC. The spectroscopic data indicated the induction of reversible perpendicular/tilt orientational changes of both the Az side chain and 5CB mol. upon alternative irradn. of 365 and 436 nm light. Thus, 6Az10-PVA/5CB hybrid LB film can be regarded as a satisfactory interface model of a command surface that **promotes** the homeotropic/planer **alignment** switching. From the time courses of the photoisomerization of Az and the orientational change, the mol. tilt is not governed only by the trans/cis ratio of Az unit, but is strongly process-dependent (forward or back process), indicative of involvement of strong mol. cooperativity. The validity and limitation of the LC research using this model system are also discussed.

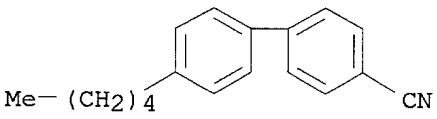
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 66, 73

IT **40817-08-1**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(modeling interface region of photochem. switch command surface with spectroscopic evaluations of azobenzene/liq. crystal hybrid Langmuir-Blodgett films under illumination)

IT **52364-71-3**, 5OCB **151752-94-2**
RL: PRP (Properties)
(modeling interface region of photochem. switch command surface with spectroscopic evaluations of azobenzene/liq. crystal hybrid Langmuir-Blodgett films under illumination)

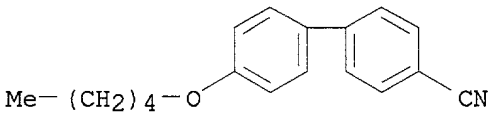
IT **40817-08-1**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(modeling interface region of photochem. switch command surface with spectroscopic evaluations of azobenzene/liq. crystal hybrid Langmuir-Blodgett films under illumination)

RN 40817-08-1 HCAPLUS
CN [1,1'-Biphenyl]-4-carbonitrile, 4'-pentyl- (9CI) (CA INDEX NAME)



IT **52364-71-3**, 5OCB **151752-94-2**
RL: PRP (Properties)
(modeling interface region of photochem. switch command surface with spectroscopic evaluations of azobenzene/liq. crystal hybrid Langmuir-Blodgett films under illumination)

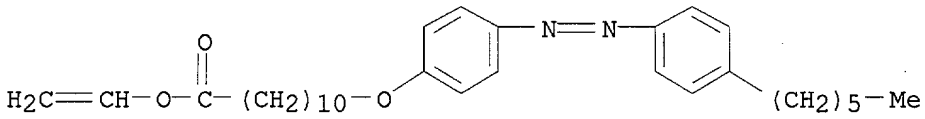
RN 52364-71-3 HCAPLUS
CN [1,1'-Biphenyl]-4-carbonitrile, 4'-(pentyloxy)- (9CI) (CA INDEX NAME)



RN 151752-94-2 HCAPLUS
CN Undecanoic acid, 11-[4-[(4-hexylphenyl)azo]phenoxy]-, ethenyl ester, polymer with ethenol (9CI) (CA INDEX NAME)

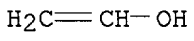
CM 1

CRN 151752-93-1
CMF C31 H44 N2 O3



CM 2

CRN 557-75-5
CMF C2 H4 O



RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:119297 HCAPLUS
DN 130:230859
TI Control of the bias tilt angles in nematic liquid crystals
AU Yablonskii, S. V.; Nakayama, K.; Okazaki, S.; Ozaki, M.; Yoshino, K.; Palto, S. P.; Baranovich, M. Yu.; Michailov, A. S.
CS Faculty of Engineering, Department of Electronic Engineering, Osaka University, 2-1 Ymada-Oka, Suita, Osaka, 565-0871, Japan
SO Journal of Applied Physics (1999), 85(5), 2556-2561
CODEN: JAPIAU; ISSN: 0021-8979
PB American Institute of Physics
DT Journal
LA English
AB The pretilt angle controlled by elec. field was studied by the modulation ellipsometry technique. The easy direction of compensated nematic liq. crystals was controlled by surface flexoelec. torque created by the linear coupling of the director deformation and elec. field. The weak anchoring energy necessary for the occurrence of flexoelec. distortion was produced by unidirectional rubbing of the clean In-Sn-oxide covered glasses with a cotton cloth. The pretilt angle was measured as a function of elec. field. Long relaxation times of the optical response (hundreds of seconds) were obsd. The rubbed thin polyvinyl alc. and polyimide

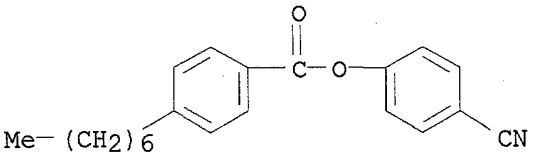
aligning layers **promote** strong anchoring energy (>0.5 erg/cm2) preventing any deviation of pretilt angle and, consequently, to suppress the optical response. The probable applications of the obtained results are discussed.

CC 76-13 (Electric Phenomena)
Section cross-reference(s): 75

IT 11106-72-2, p-Butyl-p'-heptanoyloxyazoxybenzene **38690-76-5** **97402-82-9**, MBBA
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(control of bias tilt angles in nematic liq. crystals by elec. fields)

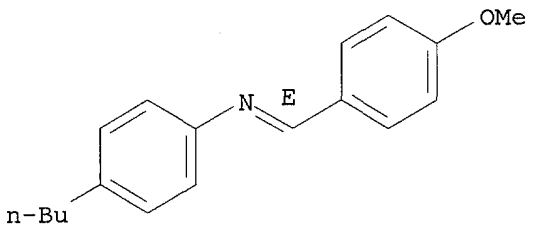
IT **38690-76-5** **97402-82-9**, MBBA
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(control of bias tilt angles in nematic liq. crystals by elec. fields)

RN 38690-76-5 HCAPLUS
CN Benzoic acid, 4-heptyl-, 4-cyanophenyl ester (9CI) (CA INDEX NAME)



RN 97402-82-9 HCAPLUS
CN Benzenamine, 4-butyl-N-[(4-methoxyphenyl)methylene]-, [N(E)]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:441902 HCAPLUS
DN 129:149554
TI Morphological investigation of polyvinyl-4-methoxy cinnamate photopolymer thin and ultrathin films under linear photopolymerization
AU Rajesh, K.; Ram, M. K.; Jain, S. C.; Samanta, S. B.; Narliker, A. V.
CS Display Devices Group, National Physical Laboratory, New Delhi, India
SO Thin Solid Films (1998), 325(1,2), 251-253
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier Science S.A.
DT Journal
LA English

AB The characteristics of the surface of poly(vinyl-4-methoxy cinnamate) (PVMC) photopolymer film which **promotes** the uniform **alignment** in adjacent liq. crystals upon photopolymn. by linear polarized UV light have been investigated. Under photopolymn. the surface morphol. of the polymer film changes and the polymer orients normal to the polarization direction of the UV light. The results confirm the microscopic model of the linear photopolymd. induced unidirectional order as reported by Schadt et al. (M. Schadt, K. Schmitt, V. Koznikov, V. Chignirov, Jpn. J. Appl. Phys. 31 (1992) 2155).

CC 37-5 (Plastics Manufacture and Processing)

IT **61204-01-1,** PCH-5
RL: NUU (Other use, unclassified); USES (Uses)
(liq. crystal; morphol. of poly(vinyl-4-methoxy cinnamate) thin and ultrathin films after polymn. with linear polarized UV light at sub-micron level in presence of)

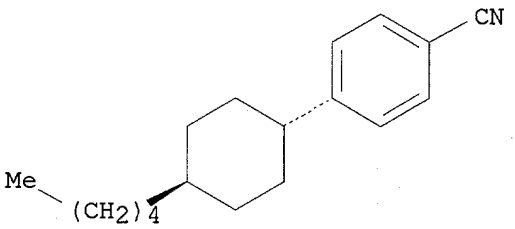
IT **32732-28-8,** Poly(vinyl-4-methoxy cinnamate)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(morphol. of poly(vinyl-4-methoxy cinnamate) thin and ultrathin films after polymn. with linear polarized UV light at sub-micron level)

IT **61204-01-1,** PCH-5
RL: NUU (Other use, unclassified); USES (Uses)
(liq. crystal; morphol. of poly(vinyl-4-methoxy cinnamate) thin and ultrathin films after polymn. with linear polarized UV light at sub-micron level in presence of)

RN 61204-01-1 HCAPLUS

CN Benzonitrile, 4-(trans-4-pentylcyclohexyl)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



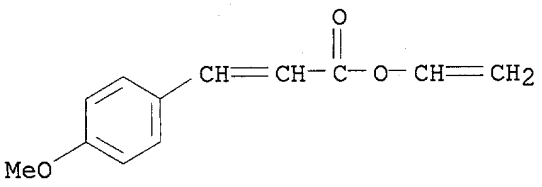
IT **32732-28-8,** Poly(vinyl-4-methoxy cinnamate)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(morphol. of poly(vinyl-4-methoxy cinnamate) thin and ultrathin films after polymn. with linear polarized UV light at sub-micron level)

RN 32732-28-8 HCAPLUS

CN 2-Propenoic acid, 3-(4-methoxyphenyl)-, ethenyl ester, homopolymer (9CI) (CA INDEX NAME)

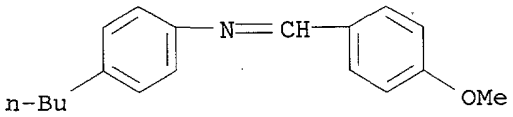
CM 1

CRN 10604-64-5
CMF C12 H12 O3



RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

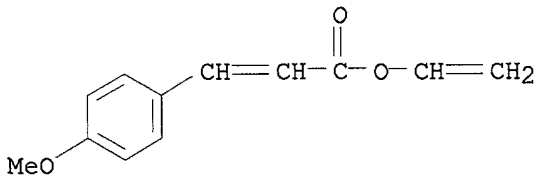
L26 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1997:498912 HCAPLUS
DN 127:240913
TI Alignment of liquid crystal on poly(vinyl cinnamate) photopolymer and anchoring direction
AU Rajesh, Kumar; Masuda, Shin; Yamaguchi, Rumiko; Sato, Susumu
CS Department of Electrical and Electronic Engineering, Akita University, Akita, 010, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (1997), 36(7A), 4404-4408
CODEN: JAPNDE; ISSN: 0021-4922
PB Japanese Journal of Applied Physics
DT Journal
LA English
AB A poly(vinyl cinnamate) photopolymer under irradn. of linearly polarized UV light acts as an aligning agent inducing orientation in adjacent liq. crystals. We have promoted the homogeneous as well as homeotropic alignment of liq. crystal using poly(vinyl cinnamate) as an aligning agent, under different exptl. conditions. The anticipated orientation mechanism for the **promotion** of homeotropic **alignment** in the case of a liq. crystal/photopolymer composite system is discussed. From our observations we infer that in a liq. crystal/photopolymer composite system with a change of curing condition, the boundary surface condition at the substrates changes, which in turn affects the mode of alignment.
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
IT **26227-73-6**, p-Methoxybenzylidene-p-n-butylaniline
32732-28-8, Poly(vinyl-4-methoxy cinnamate) **40817-08-1**,
K15 **63748-28-7**, E7 (Liquid crystal) 148880-66-4, RDN-91207
RL: DEV (Device component use); USES (Uses)
(poly(vinyl-methoxy cinnamate) alignment layer for liq. crystals)
IT **26227-73-6**, p-Methoxybenzylidene-p-n-butylaniline
32732-28-8, Poly(vinyl-4-methoxy cinnamate) **40817-08-1**,
K15 **63748-28-7**, E7 (Liquid crystal)
RL: DEV (Device component use); USES (Uses)
(poly(vinyl-methoxy cinnamate) alignment layer for liq. crystals)
RN 26227-73-6 HCAPLUS
CN Benzenamine, 4-butyl-N-[(4-methoxyphenyl)methylene]- (9CI) (CA INDEX NAME)



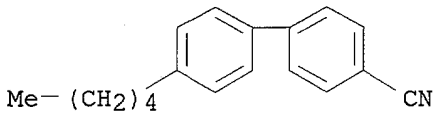
RN 32732-28-8 HCAPLUS
CN 2-Propenoic acid, 3-(4-methoxyphenyl)-, ethenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 10604-64-5
CMF C12 H12 O3



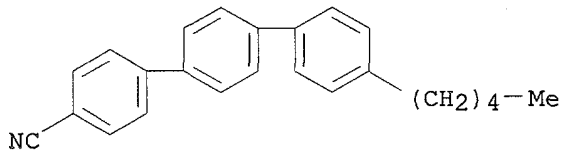
RN 40817-08-1 HCAPLUS
CN [1,1'-Biphenyl]-4-carbonitrile, 4'-pentyl- (9CI) (CA INDEX NAME)



RN 63748-28-7 HCAPLUS
CN [1,1':4',1''-Terphenyl]-4-carbonitrile, 4''-pentyl-, mixt. with 4'-heptyl[1,1'-biphenyl]-4-carbonitrile, 4'-(octyloxy)[1,1'-biphenyl]-4-carbonitrile and 4'-pentyl[1,1'-biphenyl]-4-carbonitrile (9CI) (CA INDEX NAME)

CM 1

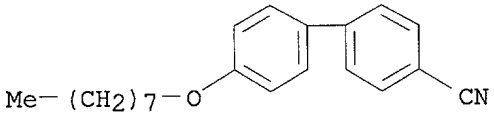
CRN 54211-46-0
CMF C24 H23 N



CM 2

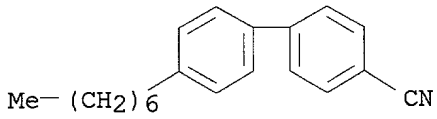
CRN 52364-73-5

CMF C21 H25 N O



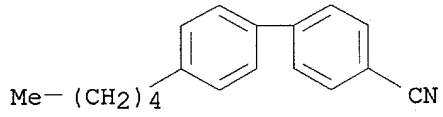
CM 3

CRN 41122-71-8
CMF C20 H23 N



CM 4

CRN 40817-08-1
CMF C18 H19 N



L26 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1995:693143 HCAPLUS
DN 123:70500
TI Cholesteric liquid crystal devices
IN Rosenblatt, Charles; Fisch, Michael R.; Crandall, Karl A.; Petschek, Rolfe
PA Case Western Reserve University, USA
SO PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9500879	A1	19950105	WO 1994-US6835	19940616
	W: CN, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5477358	A	19951219	US 1993-81009	19930621
	CN 1125986	A	19960703	CN 1994-192535	19940616
	CN 1040582	B	19981104		
	EP 737326	A1	19961016	EP 1994-921312	19940616
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 08511881	T2	19961210	JP 1994-502961	19940616

US 5602662 A 19970211 US 1995-389316 19950216
PRAI US 1993-81009 19930621
WO 1994-US6835 19940616

AB A liq. crystal cell is described where the cell walls are treated to **promote** homeotropic **alignment** of a chiral nematic liq. crystal material and where the liq.-crystal material has a neg. dielec. anisotropy and includes sufficiently low amt. of chiral material to enable the liq.-crystal director to homeotropic align in the absence of a field.

IC ICM G02F001-1337

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **165179-06-6 165179-07-7**
RL: DEV (Device component use); USES (Uses)
(liq.-crystal device with treated wall for homeotropic alignment)

IT **165179-06-6 165179-07-7**
RL: DEV (Device component use); USES (Uses)
(liq.-crystal device with treated wall for homeotropic alignment)

RN 165179-06-6 HCAPLUS

CN [1,1'-Biphenyl]-4-carbonitrile, 4'-(2-methylbutyl)-, (S)-, mixt. with ZLI 2806 (9CI) (CA INDEX NAME)

CM 1

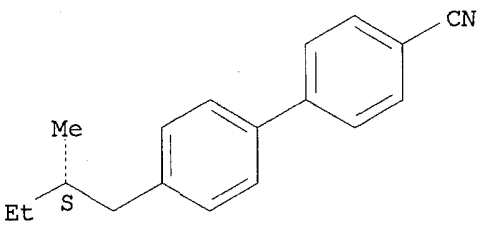
CRN 113782-31-3
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 63799-11-1
CMF C18 H19 N

Absolute stereochemistry. Rotation (+).



RN 165179-07-7 HCAPLUS

CN [1,1'-Biphenyl]-4-carbonitrile, 4'-(2-methylbutyl)-, (S)-, mixt. with ZLI 4330 (9CI) (CA INDEX NAME)

CM 1

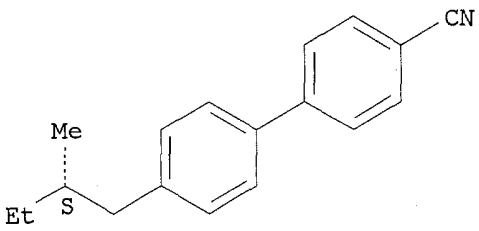
CRN 137545-99-4
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 63799-11-1
CMF C18 H19 N

Absolute stereochemistry. Rotation (+).



L26 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1995:683049 HCAPLUS
DN 123:57946
TI Langmuir-Blodgett Films of Amphiphilic Polysilanes Bearing a Pendant Ammonium Moiety
AU Seki, Takahiro; Tanigaki, Nobutaka; Yase, Kiyoshi; Kaito, Akira; Tamaki, Takashi; Ueno, Katsuhiko; Tanaka, Yuji
CS Research Laboratory of Resources Utilization, Tokyo Institute of Technology, Yokohama, 226, Japan
SO Macromolecules (1995), 28(16), 5609-17
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
AB Eight homologous amphiphilic polysilanes bearing an ammonium moiety in the side substituent were synthesized. The spreading behavior at the air-water interface of these polysilanes, mol. film fabrication by the Langmuir-Blodgett (LB) technique, and their UV absorption properties and structural features were investigated. The UV absorption spectrum of the transferred LB films was dependent on the deposition condition, such as the existence of a hydrophobic counteranion in the substrate and the magnitude of mech. compression by the moving barrier. Such spectral changes should be coupled with conformational changes, i.e., trans/gauche populational changes of the Si backbone modified at the air-water interface. A related conformational modification was achieved when the polysilane monolayer was mixed with stearic acid as the lateral spacer. Polarized UV spectroscopy revealed that the Si backbone is preferentially oriented along the dipping direction possibly due to flow orientation on the water surface. This orientational order depended strongly on the mol. structure of the polysilane and the deposition no. The hydrocarbon side chain, the layer structure, and the morphol. of the LB films were evaluated by Fourier transform IR spectroscopy, transmittance electron microscopy, and X-ray reflectometry. These measurements put forth a view that the LB films are composed of periodical double layers having a homogeneous and amorphous character. Furthermore, a multilayered LB film having the **aligned** Si backbone **promoted** *homogeneous* **alignment** of a nematic liq. crystal in the dipping direction.
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 36, 37
IT 112-18-5DP, N,N-Dimethyldodecylamine, reaction products with

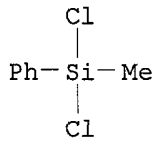
chloromethylated polysilanes 124-28-7DP, N,N-Dimethyloctadecylamine, reaction products with chloromethylated polysilanes 4088-22-6DP, N-Methyldioctadecylamine, reaction products with chloromethylated polysilanes 7378-99-6DP, N,N-Dimethyloctylamine, reaction products with chloromethylated polysilanes **31324-77-3DP**, Dichloromethylphenylsilane homopolymer, chloromethylated, reaction products with tertiary amines **76188-55-1DP**, Dichloromethylphenylsilane homopolymer, sru, chloromethylated, reaction products with tertiary amines **113925-33-0DP**, Dichlorodihexylsilane-Dichloromethylphenylsilane copolymer, chloromethylated, reaction products with tertiary amines
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. and characterization of Langmuir-Blodgett films of amphiphilic polysilanes bearing pendant ammonium moiety)

IT **31324-77-3DP**, Dichloromethylphenylsilane homopolymer, chloromethylated, reaction products with tertiary amines **76188-55-1DP**, Dichloromethylphenylsilane homopolymer, sru, chloromethylated, reaction products with tertiary amines **113925-33-0DP**, Dichlorodihexylsilane-Dichloromethylphenylsilane copolymer, chloromethylated, reaction products with tertiary amines
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. and characterization of Langmuir-Blodgett films of amphiphilic polysilanes bearing pendant ammonium moiety)

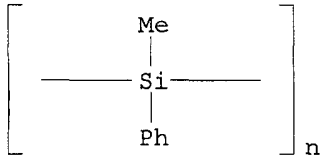
RN 31324-77-3 HCAPLUS
CN Silane, dichloromethylphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 149-74-6
CMF C7 H8 Cl2 Si



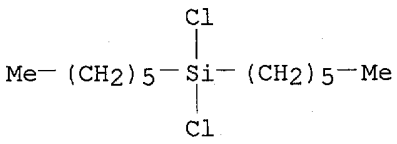
RN 76188-55-1 HCAPLUS
CN Poly(methylphenylsilylene) (9CI) (CA INDEX NAME)



RN 113925-33-0 HCAPLUS
CN Silane, dichlorodihexyl-, polymer with dichloromethylphenylsilane (9CI) (CA INDEX NAME)

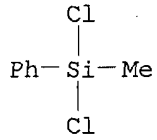
CM 1

CRN 18204-93-8
CMF C12 H26 Cl2 Si



CM 2

CRN 149-74-6
CMF C7 H8 Cl2 Si



L26 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1995:241607 HCAPLUS
DN 122:202129
TI A permittive effect on the threshold behavior at low frequencies and the drift of charge carriers with a liquid-crystalline system of cyanophenylcyclohexanes
AU Oh-E, M.; Kondo, K.; Kando, Y.
CS Hitachi Research Laboratory, Hitachi, Ltd., Ibaraki-ken, 319-12, Japan
SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1994), 250, 51-62
CODEN: MCLCE9; ISSN: 1058-725X
PB Gordon & Breach
DT Journal
LA English
AB Measurements are reported for threshold voltage dependence on the frequency of a nematic liq.-cryst. system composed of cyanophenylcyclohexanes (PCHs). The PCH liq. crystal having a strong dipole only at the terminal position of the mols. showed a frequency independent of threshold voltage at low frequencies. In their mixt., increasing permittivity affected the threshold behavior, finally causing a drop in threshold voltage at low frequencies. The difference in systems with and without the drop in threshold voltage is related to the drift of charge carriers. Relaxation time measurements of transmittance against d.c. bias revealed a tendency for the drift of charge carriers in the liq. crystal layer. The liq.-cryst. system composed of PCHs showed relatively slower relaxation than the system with increased permittivity due to addn. of certain dopants. In the migration of charge carriers, a model is proposed considering the changes of permittivity. In this model the assocn. structure of the liq. crystal mols. is altered by increasing permittivity. Thus the drift of charge carriers, which is related to the formation of interfacial polarization between the liq. crystal and

alignment film layers, is **promoted** by loss of the mol. assocn. structure.

CC 76-1 (Electric Phenomena)
Section cross-reference(s): 74, 75

IT **122402-85-1 125497-50-9**
RL: NUU (Other use, unclassified); USES (Uses)
(liq. crystal orienting substrate; threshold voltage dependence on frequency of nematic liq.-cryst. system composed of cyanophenylcyclohexanes)

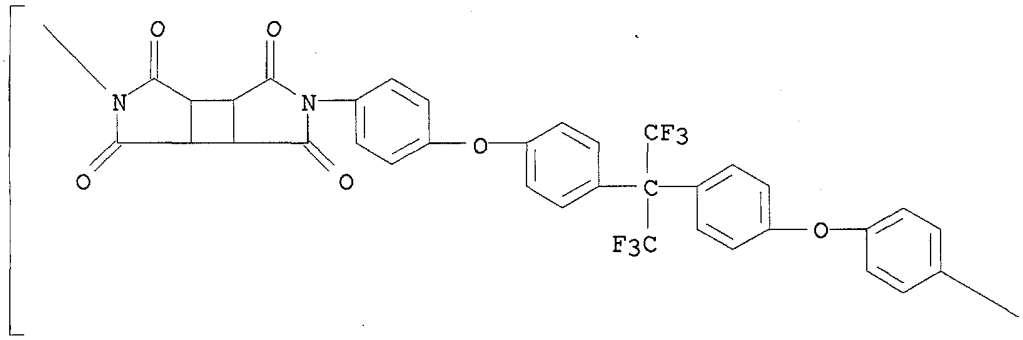
IT **62439-33-2 74240-64-5 80944-44-1**
86776-50-3 92118-82-6 161860-55-5D, alkyl deriv.
RL: MOA (Modifier or additive use); USES (Uses)
(threshold voltage dependence on frequency of nematic liq.-cryst. system composed of cyanophenylcyclohexanes)

IT **122402-85-1 125497-50-9**
RL: NUU (Other use, unclassified); USES (Uses)
(liq. crystal orienting substrate; threshold voltage dependence on frequency of nematic liq.-cryst. system composed of cyanophenylcyclohexanes)

RN 122402-85-1 HCAPLUS

CN Poly[(octahydro-1,3,4,6-tetraoxocyclobuta[1,2-c:3,4-c']dipyrrole-2,5-diyl)-1,4-phenyleneoxy-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

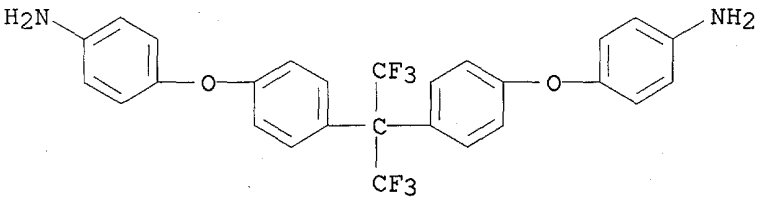


PAGE 1-B

RN 125497-50-9 HCAPLUS
CN Cyclobuta[1,2-c:3,4-c']difurantetrone, tetrahydro-, polymer with 4,4'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

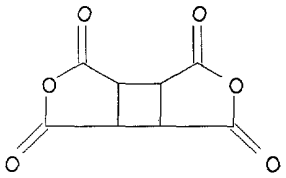
CM 1

CRN 69563-88-8
CMF C27 H20 F6 N2 O2



CM 2

CRN 4415-87-6
CMF C8 H4 O6

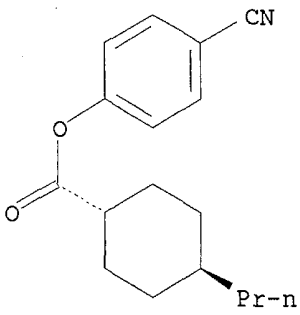


IT **62439-33-2 74240-64-5 80944-44-1**
86776-50-3 92118-82-6 161860-55-5D, alkyl deriv.
RL: MOA (Modifier or additive use); USES (Uses)
(threshold voltage dependence on frequency of nematic liq.-cryst. system composed of cyanophenylcyclohexanes)

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

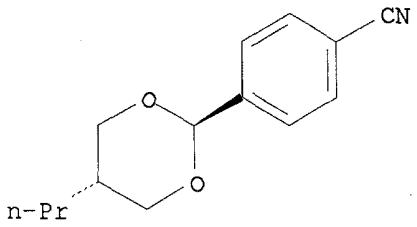
RN 62439-33-2 HCAPLUS
CN Cyclohexanecarboxylic acid, 4-propyl-, 4-cyanophenyl ester, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



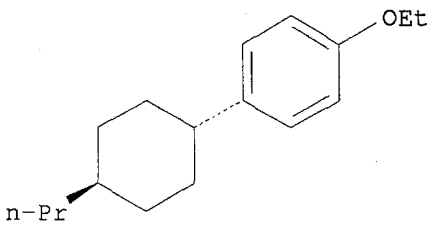
RN 74240-64-5 HCAPLUS
CN Benzonitrile, 4-(trans-5-propyl-1,3-dioxan-2-yl)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

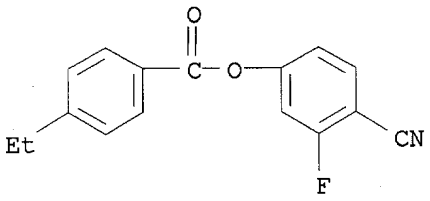


RN 80944-44-1 HCAPLUS
CN Benzene, 1-ethoxy-4-(trans-4-propylcyclohexyl)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

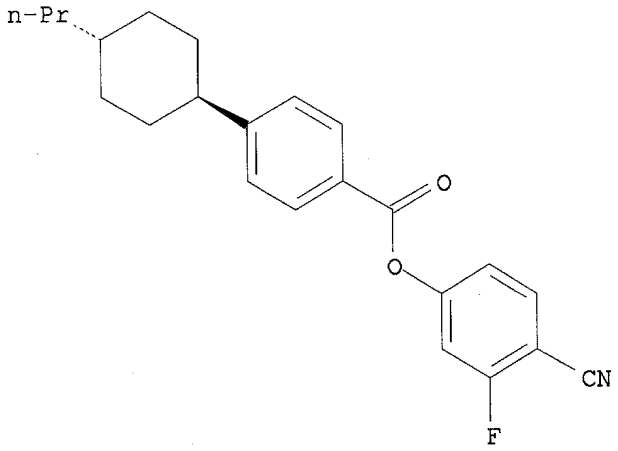


RN 86776-50-3 HCAPLUS
CN Benzoic acid, 4-ethyl-, 4-cyano-3-fluorophenyl ester (9CI) (CA INDEX NAME)

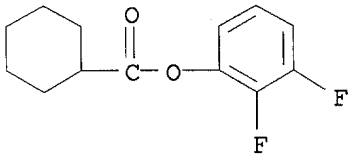


RN 92118-82-6 HCAPLUS
CN Benzoic acid, 4-(trans-4-propylcyclohexyl)-, 4-cyano-3-fluorophenyl ester (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 161860-55-5 HCAPLUS
CN Cyclohexanecarboxylic acid, 2,3-difluorophenyl ester (9CI) (CA INDEX NAME)



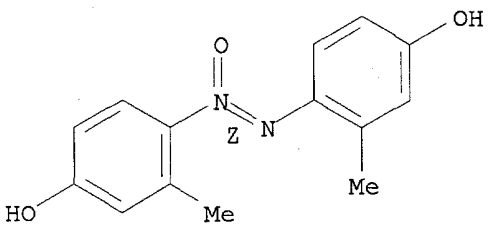
L26 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1990:593306 HCAPLUS
DN 113:193306
TI Fibers from flexible liquid crystal main-chain polymers. II. Functional copolymers based on the 4,4'-dihydroxy-2,2'-dimethylazoxybenzene mesogen and spacers based on 2-dodecenedioic and nonanedioic acids
AU Lin, C. H.; Maeda, M.; Blumstein, A.
CS Dep. Chem., Univ. Lowell, Lowell, MA, 01854, USA
SO Journal of Applied Polymer Science (1990), 41(5-6), 1009-22
CODEN: JAPNAB; ISSN: 0021-8995

DT Journal
LA English
AB Fibers spun from liq.-cryst. solns. or melts are characterized by a high degree of chain **alignment** which **promotes** high values of tenacity and tensile modulus in the direction of fiber axis but lower values in the transversal direction. Structural modifications are introduced into the flexible moiety and the mesogenic group to alleviate this shortcoming. The incorporation of a spacer based on 2-dodecenedioic acid into a thermotropic liq.-cryst. polyester was studied. A phase diagram was established to optimize the compn. of such copolyesters. A significant increase in mech. properties on crosslinking through UV irradn. was obsd. A remarkable property of such systems was the retention of mol. chain order in spite of temps. in excess of the glass transition temp. This is valid for both crosslinked and uncrosslinked systems. The crystn. on annealing of a no. of copolymer compns. was remarkable because it occurred in spite of a certain mismatch in length (.apprx.2 .ANG.) and a difference in the structure of the flexible spacer.
CC 40-3 (Textiles and Fibers)
IT **124895-98-3**
RL: USES (Uses)
(fiber, mech. properties of, UV crosslinking effect on)
IT 82851-48-7 **130141-00-3 130141-01-4** 130174-07-1
RL: USES (Uses)
(thermal transition temps. of liq. cryst., fiber spinning in relation to)
IT **124895-98-3**
RL: USES (Uses)
(fiber, mech. properties of, UV crosslinking effect on)
RN 124895-98-3 HCAPLUS
CN 2-Dodecenedioic acid, (E)-, polymer with (Z)-4,4'-azoxybis[3-methylphenol] and nonanedioic acid (9CI) (CA INDEX NAME)

CM 1

CRN 78992-83-3
CMF C14 H14 N2 O3

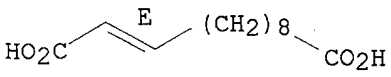
Double bond geometry as shown.



CM 2

CRN 6402-36-4
CMF C12 H20 O4

Double bond geometry as shown.



CM 3

CRN 123-99-9
CMF C9 H16 O4

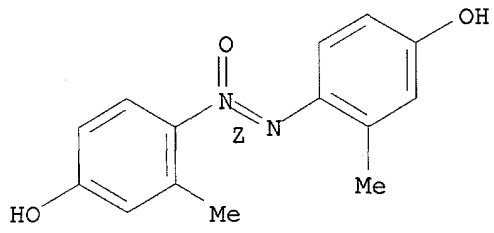
$HO_2C-(CH_2)_7-CO_2H$

IT **130141-00-3 130141-01-4**
RL: USES (Uses)
(thermal transition temps. of liq. cryst., fiber spinning in relation to)
RN 130141-00-3 HCAPLUS
CN 2-Dodecenedioic acid, (E)-, polymer with (Z)-4,4'-azoxybis[3-methylphenol] (9CI) (CA INDEX NAME)

CM 1

CRN 78992-83-3
CMF C14 H14 N2 O3

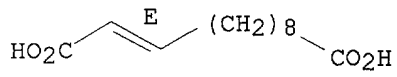
Double bond geometry as shown.



CM 2

CRN 6402-36-4
CMF C12 H20 O4

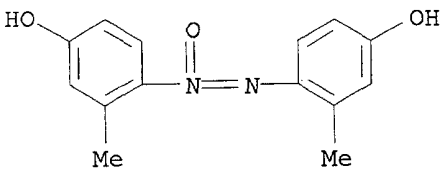
Double bond geometry as shown.



RN 130141-01-4 HCAPLUS
CN Nonanedioic acid, polymer with 4,4'-azoxybis[3-methylphenol] (9CI) (CA INDEX NAME)

CM 1

CRN 119176-66-8
CMF C14 H14 N2 O3



CM 2

CRN 123-99-9
CMF C9 H16 O4

$HO_2C-(CH_2)_7-CO_2H$

L26 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1986:524362 HCAPLUS
DN 105:124362
TI Ferroelectric liquid crystal display cells
IN Crossland, William Alden; Davey, Anthony Bernard; Bone, Matthew Francis
PA ITT Industries, Inc., USA; Deutsche ITT Industries G.m.b.H.
SO Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 179592	A2	19860430	EP 1985-307174	19851008
	EP 179592	A3	19870916		
	R: AT, BE, CH, DE, FR, IT, LI, LU, NL, SE				
	AU 8548516	A1	19860501	AU 1985-48516	19851011
	AU 573039	B2	19880526		
	JP 05004647	B4	19930120	JP 1985-237805	19851025
PRAI	GB 1984-26976		19841025		

AB A bistable ferroelec. liq. crystal smectic I* or smectic F* display cell has a liq. crystal layer confined between opposed electrode plates. The inward facing surfaces are heated to provide planar alignment of the adjacent liq. crystal mols. in the same direction at each of the 2 surfaces. The plates serve to define a liq. crystal layer in the range 4-40 .mu. but which still permits bistable operation. Thus, a hermetically sealed envelope, for liq. crystal layer, was formed by securing together 2 glass sheets, of which the inward facing surfaces carried transparent In-Sn-oxide electrode layers covered with a polyimide layer. Both polyimide layers were rubbed in a single direction to **promote** planar **alignment** of the liq. crystal mols. in the direction of the rubbing and assembled parallel to each other. The cell was filled with the chiral ester C8H17C6H4-p-C6H4-p-CO2C6H4-p-

CH2CH*(CH3)C2H5, also known as CE8. With the cell maintained at 69.8.degree., to keep the filling in I* phase, and mounted between crossed polarizers aligned with their polarization planes at 45.degree. to the rubbing direction, the pulse duration was .apprx.100 ms for 30 V pulses.

IC ICM G02F001-137
ICS G02F001-133; C09K019-20; C09K019-46

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75, 76

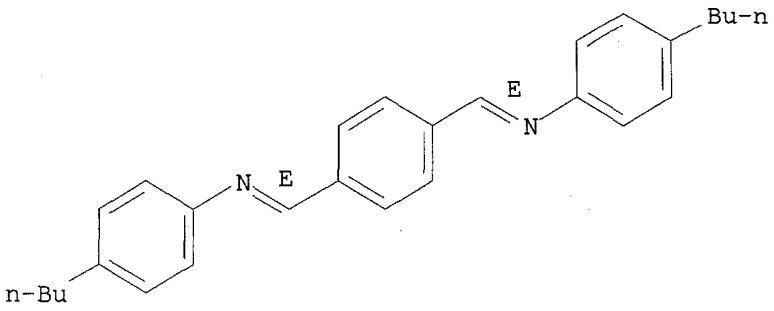
IT **54173-15-8 97139-97-4**
RL: USES (Uses)
(ferroelec. liq. crystal layer contg., for display devices)

IT **70116-35-7**
RL: USES (Uses)
(liq. crystals from, for display devices)

IT **54173-15-8 97139-97-4**
RL: USES (Uses)
(ferroelec. liq. crystal layer contg., for display devices)

RN 54173-15-8 HCAPLUS
CN Benzenamine, N,N'-(1,4-phenylenedimethylidyne)bis[4-butyl-, [N(E),N'(E)]- (9CI) (CA INDEX NAME)

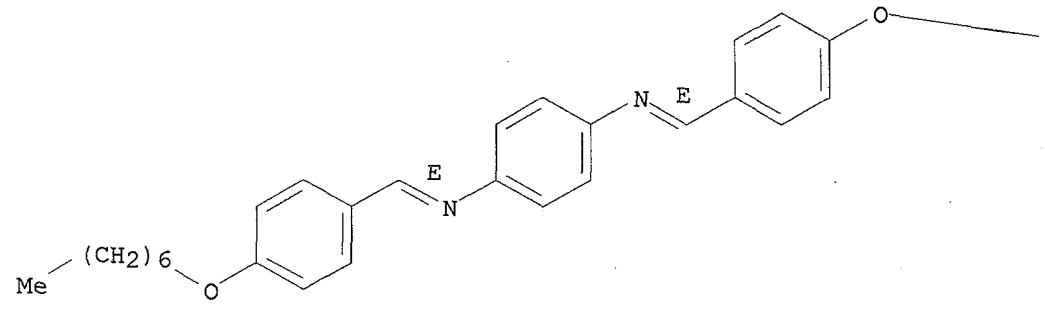
Double bond geometry as shown.



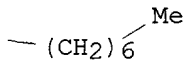
RN 97139-97-4 HCAPLUS
CN 1,4-Benzenediamine, N,N'-bis[[4-(heptyloxy)phenyl]methylene]-, [N(E),N'(E)]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

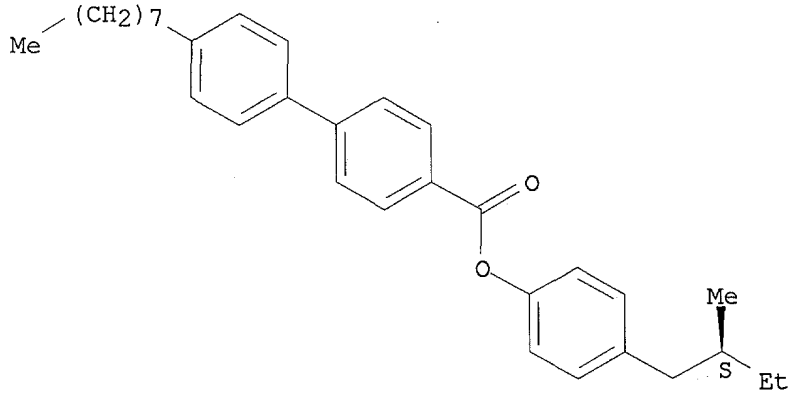


PAGE 1-B



IT **70116-35-7**
RL: USES (Uses)
(liq. crystals from, for display devices)
RN 70116-35-7 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-octyl-, 4-[(2S)-2-methylbutyl]phenyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L26 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1983:603667 HCAPLUS
DN 99:203667
TI Electrooptical display devices
PA Nippon Electric Co., Ltd., Japan
SO Jpn. Tokkyo Koho, 3 pp.
CODEN: JAXXAD
DT Patent
LA Japanese
FAN.CNT 1

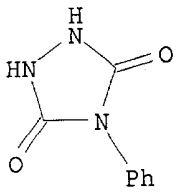
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 57033565	B4	19820717	JP 1973-113026	19731008
PRAI	JP 1973-113026		19731008		

AB Electrode plates for liq. crystal display devices are coated with .gtoreq.1 of 4-phenylurazole, isatin, 2,5-diketopiperazine, coumarin, 5-aminobarbituric acid, quinhydrone, 1,5-dihydroxyanthraquinone. The coatings **promote** homeotropic **alignment** of the liq. crystal mols. in the display cell.
IC G02F001-133; C09K003-34
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75, 76
IT 91-56-5 91-64-5 106-34-3 106-57-0 117-12-4 118-78-5
15988-11-1
RL: USES (Uses)

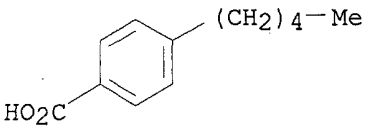
(mol. orientation controlling films of, for liq. crystal display devices)

IT **15988-11-1**
RL: USES (Uses)
(mol. orientation controlling films of, for liq. crystal display devices)

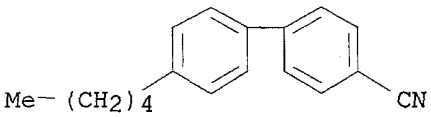
RN 15988-11-1 HCAPLUS
CN 1,2,4-Triazolidine-3,5-dione, 4-phenyl- (9CI) (CA INDEX NAME)



L26 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1980:13894 HCAPLUS
DN 92:13894
TI Induced smectic mesomorphism in mixtures of p-cyano-p'-pentylbiphenyl and p-pentylbenzoic acid
AU Yu, L. J.; Labes, M. M.
CS Dep. Chem., Temple Univ., Philadelphia, PA, 19122, USA
SO Molecular Crystals and Liquid Crystals (1979), 54(1-2), 1-8
CODEN: MCLCA5; ISSN: 0026-8941
DT Journal
LA English
AB The phase diagram of p-cyano-p'-pentylbiphenyl (CPB) and p-pentylbenzoic acid (5BA) shows a max. value of the nematic-isotropic transition temp. at .apprx. equimolar concns. of CPB and the dimer of 5BA (D5BA). Two eutectic points occur at concns. of D5BA of 8 and 65 mol %, resp., and an induced smectic phase occurs at 15-65% D5BA. Dielec. properties and the spontaneous homeotropy of some of the mixts. can best be understood by considering the phases to consist primarily of D5BA and CPB, with a small amt. of free 5BA modulating the dielec. properties and **promoting** homeotropic **alignment.**
CC 75-4 (Crystallization and Crystal Structure)
Section cross-reference(s): 76
IT **26311-45-5**
RL: PRP (Properties)
(induced sym. mesomorphism in mixt. of cyanopentylbiphenyl and dimeric)
IT **40817-08-1**
RL: PRP (Properties)
(induced sym. mesomorphism in mixt. of pentylbenzoic acid and)
IT **26311-45-5**
RL: PRP (Properties)
(induced sym. mesomorphism in mixt. of cyanopentylbiphenyl and dimeric)
RN 26311-45-5 HCAPLUS
CN Benzoic acid, 4-pentyl- (9CI) (CA INDEX NAME)



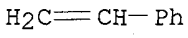
IT **40817-08-1**
RL: PRP (Properties)
(induced sym. mesomorphism in mixt. of pentylbenzoic acid and)
RN 40817-08-1 HCAPLUS
CN [1,1'-Biphenyl]-4-carbonitrile, 4'-pentyl- (9CI) (CA INDEX NAME)



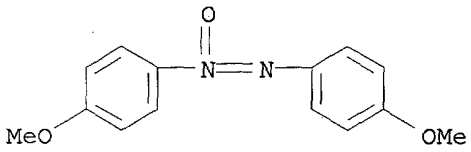
L26 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1977:585417 HCAPLUS
DN 87:185417
TI Role of coupling agents in surface modification of fillers
AU Plueddemann, E. P.; Stark, G. L.
CS Corp. Res., Dow Corning Corp., Midland, MI, USA
SO Modern Plastics (1977), 54(8), 76-8, 80
CODEN: MOPLAY; ISSN: 0026-8275
DT Journal
LA English
AB Silane coupling agents protect fillers against abrasion during polymer compounding, **promote** optimum **alignment** of polymer segments at interfaces, and overcome inhibitory catalytic effects fillers may have on polymer cure in addn. to promoting bonding at polymer-filler interfaces. The treated filler remains chem. inert during mixing, but combines with the polymer during molding to give optimum mech. strength and chem. resistance.
CC 36-6 (Plastics Manufacture and Processing)
IT **9003-53-6P** 9011-14-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, filler effect on)
IT **9003-53-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, filler effect on)
RN 9003-53-6 HCAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

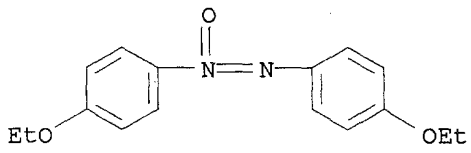
CRN 100-42-5
CMF C8 H8



L26 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1972:569882 HCAPLUS
DN 77:169882
TI Molecular arrangement of nematic liquid crystals
AU Uchida, Tatsuo; Watanabe, Hideo; Wada, Masanobu
CS Dep. Electron. Eng., Tohoku Univ., Sendai, Japan
SO Japanese Journal of Applied Physics (1972), 11(10), 1559-65
CODEN: JJAPA5; ISSN: 0021-4922
DT Journal
LA English
AB The mol. arrangement of 12 types of nematic liq. crystals was obsd. on the surfaces of the supporting plates of glasses of soda, Pyrex, or quartz. These surfaces were treated by various methods. The impurity N-anisylidene-p-aminophenol or N-(p-ethoxybenzylidene)-p-aminophenol added to the nematic liq. crystals **promotes** the mol. **alignment** perpendicular to the glass plate. A mechanism of the mol. alignment of nematic liq. crystals on the glass surface is discussed in connection with the mol. structures of nematic liq. crystals based on the exptl. results.
CC 70-4 (Crystallization and Crystal Structure)
IT **1562-94-3 4792-83-0 10484-13-6**
13036-19-6 24742-30-1 26227-73-6
29743-08-6 29743-09-7 30298-88-5
32185-12-9 32185-20-9 32185-21-0
RL: PRP (Properties)
(liq. crystals of, mol. arrangement of nematic, glass substrate compn. effect on)
IT **1562-94-3 4792-83-0 10484-13-6**
13036-19-6 24742-30-1 26227-73-6
29743-08-6 29743-09-7 30298-88-5
32185-12-9 32185-20-9 32185-21-0
RL: PRP (Properties)
(liq. crystals of, mol. arrangement of nematic, glass substrate compn. effect on)
RN 1562-94-3 HCAPLUS
CN Diazene, bis(4-methoxyphenyl)-, 1-oxide (9CI) (CA INDEX NAME)

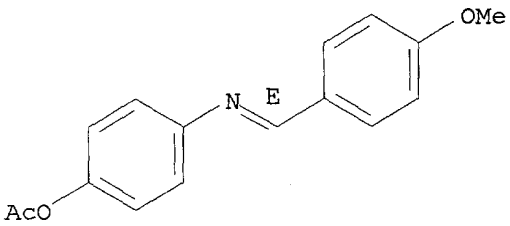


RN 4792-83-0 HCAPLUS
CN Diazene, bis(4-ethoxyphenyl)-, 1-oxide (9CI) (CA INDEX NAME)

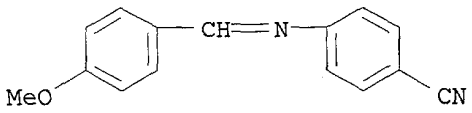


RN 10484-13-6 HCAPLUS
CN Phenol, 4-[(E)-[(4-methoxyphenyl)methylene]amino]-, acetate (ester) (9CI) (CA INDEX NAME)

Double bond geometry as shown.

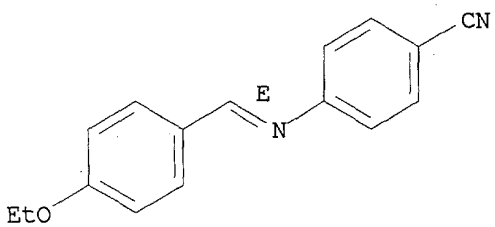


RN 13036-19-6 HCAPLUS
CN Benzonitrile, 4-[[(4-methoxyphenyl)methylene]amino]- (9CI) (CA INDEX NAME)

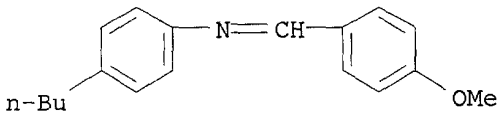


RN 24742-30-1 HCAPLUS
CN Benzonitrile, 4-[(E)-[(4-ethoxyphenyl)methylene]amino]- (9CI) (CA INDEX NAME)

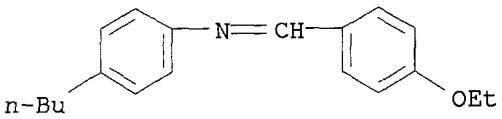
Double bond geometry as shown.



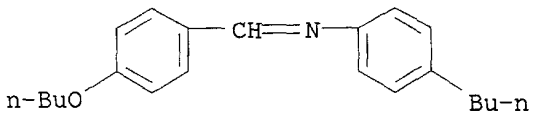
RN 26227-73-6 HCAPLUS
CN Benzenamine, 4-butyl-N-[(4-methoxyphenyl)methylene]- (9CI) (CA INDEX NAME)



RN 29743-08-6 HCAPLUS
CN Benzenamine, 4-butyl-N-[(4-ethoxyphenyl)methylene]- (9CI) (CA INDEX NAME)

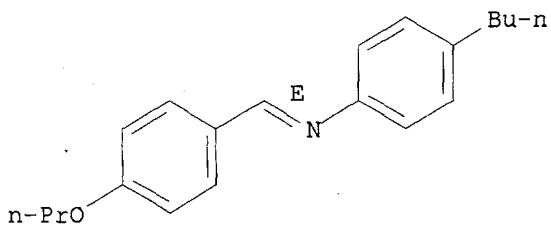


RN 29743-09-7 HCAPLUS
CN Benzenamine, N-[(4-butoxyphenyl)methylene]-4-butyl- (9CI) (CA INDEX NAME)

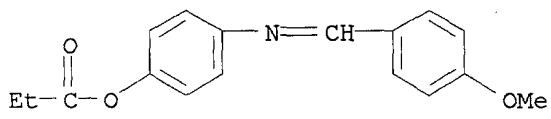


RN 30298-88-5 HCAPLUS
CN Benzenamine, 4-butyl-N-[(4-propoxyphenyl)methylene]-, (E)- (9CI) (CA INDEX NAME)

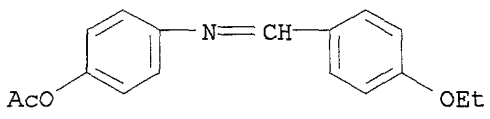
Double bond geometry as shown.



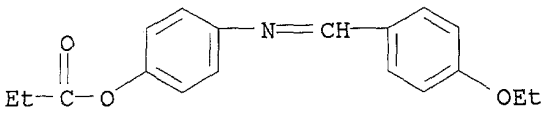
RN 32185-12-9 HCAPLUS
CN Phenol, 4-[[(4-methoxyphenyl)methylene]amino]-, propanoate (ester) (9CI) (CA INDEX NAME)



RN 32185-20-9 HCAPLUS
CN Phenol, 4-[[(4-ethoxyphenyl)methylene]amino]-, acetate (ester) (9CI) (CA INDEX NAME)

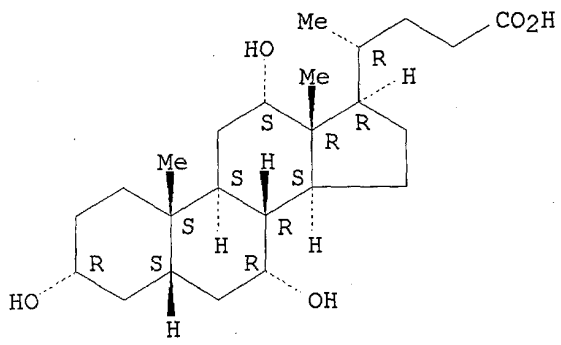


RN 32185-21-0 HCAPLUS
CN Phenol, 4-[[(4-ethoxyphenyl)methylene]amino]-, propanoate (ester) (9CI) (CA INDEX NAME)



L26 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2003 ACS
AN 1967:461176 HCAPLUS
DN 67:61176
TI Lipase from Candida paralipolytica. III. The activation of the enzyme systems with bile or calcium salts
AU Ota, Yasuhide; Yamada, Koichi
CS Univ. Tokyo, Tokyo, Japan
SO Agricultural and Biological Chemistry (1967), 31(7), 809-16
CODEN: ABCHA6; ISSN: 0002-1369
DT Journal
LA English
AB cf. CA 66: 26269g. The action of C. paralipolytica lipase in the in vitro hydrolysis of triglycerides was studied using reaction systems emulsified with 7 different emulsifiers. Systems emulsified with poly(vinyl alc.) required only Na taurocholate as essential activator. Systems emulsified with gelatin of methylcellulose required either Na taurocholate or Ca ions. In the presence of pectin or gum arabic emulsifiers, there was apparently no requirement for essential activators when olive oil was the substrate. Systems emulsified with Na cholate required the presence of NaCl. These variations in the emulsions were due to specific enzyme-emulsifier or substrate-emulsifier interaction. The systems also differed in their response to NaCl, which, at 0.2M concn., activated the gum arabic-emulsified system but completely inhibited that emulsified with lecithin and the poly(vinyl alc.) system activated with Na taurocholate. These results may be due to the difference in activation mechanisms by bile salts, Ca salts, and some macromol. emulsifiers. Various olive oil emulsions prepared with one of the above emulsifiers (except lecithin) were hydrolyzed at a similar rate at pH 8.2. The roles of bile salts and Ca salts during lipolysis by C. paralipolytica lipase are to **promote** the **alignment** of enzyme or substrate molecules and (or) the transcon formation of enzyme at the interface. 25 references.
CC 3 (Enzymes)
IT 145-42-6 **361-09-1** 7440-70-2, biological studies
RL: BIOL (Biological study)
(lipase activation by)
IT **361-09-1**
RL: BIOL (Biological study)
(lipase activation by)
RN 361-09-1 HCAPLUS
CN Cholan-24-oic acid, 3,7,12-trihydroxy-, monosodium salt, (3.alpha.,5.beta.,7.alpha.,12.alpha.)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● Na